# AEROSOL AGE

THE MAGAZINE OF PRESSURE PACKAGING

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## OF COMPETITION

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The economy of our high speed lines, (150,000 units per shift) plus tremendous warehouse space to hold the filled containers for drop shipments, has led many of the nation's leading brand names to move to Stalfort.

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Your inquiries for private label packaging, in aerosol or conventional containers, for production or test runs are invited.

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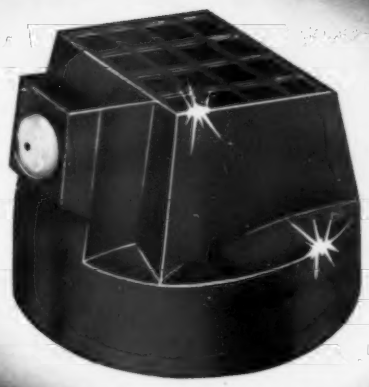
# At last! An elegant new design that gives positive directional control!

## The new JET HEAD

**by Aerosol Research**



**. . . for paint and related products!**

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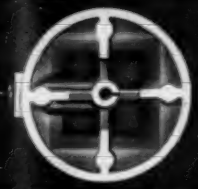

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New self centering design guarantees it. Speeds assembly, saves time and that means money.

**POSITIVE DIRECTIONAL SPRAY!**
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Jet Head hides the unsightly well of the mounting cup . . . makes a neater package. Really makes color and style of head an important design feature . . . Jet Head colors really stand out.

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**AEROSOL RESEARCH COMPANY**
**743 South Circle / Forest Park, Illinois**

Gentlemen: Please send me:

- ☐ Complete data on Jet Head.
- ☐ Have a representative bring samples at no obligation to me.
- ☐ Details on ARC's custom design service!

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COMPANY_____

ADDRESS_____

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*"Out, damned spot!"*

(Shakespeare's Macbeth. Act V, Sc. 1)

## Spra-tainer spot removers do the job

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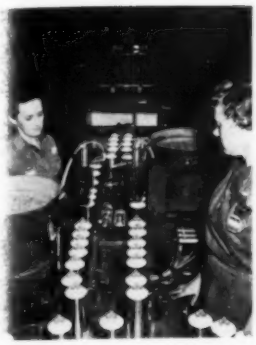

THIS MONTH'S COVER

One feature of the new automatic filling line of Sprayon Products, Inc., Cleveland custom filler, is this pair of actuator inserters. The double line of cans, coming up from the water bath, is stopped for a brief instant while the Sprayon-designed machines apply the company's own "Danvern" valve actuators. For more on this impressive new automatic line see story and other photographs on page 16.


AUGUST, 1959 VOL. 4, No. 8

# AEROSOL AGE

The magazine of pressure packaging


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**Wayne E. Dorland**
*Publisher*

**Donald A. Davis**
*Editor*

**Eleonore T. Kanar**
*Technical Editor*

**Tom C. Clark**
*European Representative*

**Ralph Dorland**
*Advertising Manager*

*District Managers*
**Roger Appleby**
**William Ryan**

**Doris Metz**
*Circulation*



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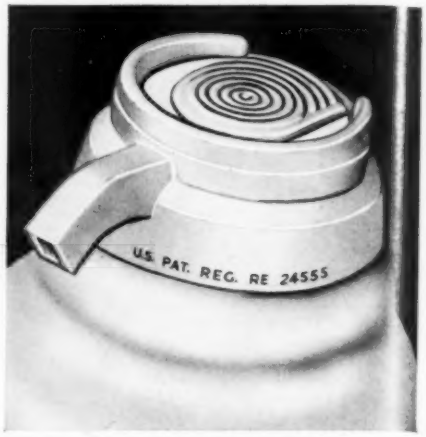
*The answers to aerosol valve needs are being developed and perfected daily at Precision . . .*

## THIS MEANS ADDITIONAL PRODUCT SALES FOR YOU!

This new Precision spray valve, in addition to its slanted finger rest has an imprinted arrow in a second color to show the direction of flow.




A Precision stream spout for dispensing any product, regardless of viscousity, that will pour. Currently most toothpaste and syrup manufacturers, are using this practical and attractive unit.

Upside down spout, designed for toppings is far simpler to use than ordinary spouts and in addition is far easier to keep clean. Just lift and hold under the faucet.

This graceful spout has proven to be a profitable way of dispensing pharmaceuticals and cosmetics. Combined with Precisions metering valve, it dispenses a pre-determined amount with a touch.

**• At Precision there is a continuing program of research and development, for each day brings new products to be packaged in aerosol containers. The success of aerosols, is based on functional design and attractive appearance for these two go hand in hand to improve dispensing and increase sales.**

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Compressed Gases for Packaging: **AIRCO** Nitrogen, Argon and Hydrogen . . . **PURECO** Carbon Dioxide . . . **OHIO** Nitrous Oxide

***Send for these informative Airco Brochures . . .***

**"New Opportunities for More Profitable Packaging"** takes the reader on an interesting picture trip through Air Reduction's Customer Service Packaging Laboratory. It also explains how our representatives — both in the field and in the "lab"—will aid you in solving packaging and processing problems involving the use of compressed gases.

**"Facts On Gases Used for Food Products"** covers many profitable applications of compressed gases in the processing, preserving and packaging of food products...improved appearance and shelf life plus higher consumer acceptance.

**AIR REDUCTION COMPANY, INC.**

*Customer Service Packaging Laboratory*
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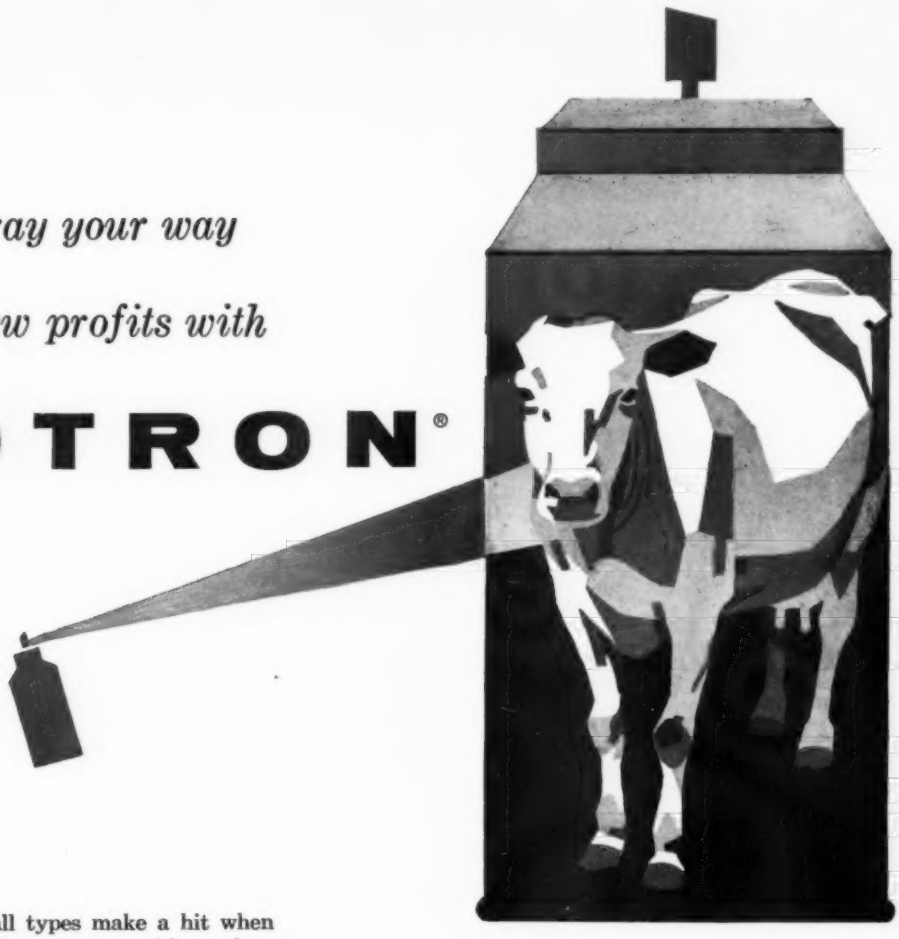

Specialty products of all types make a hit when they're packaged the aerosol way with modern propellents like ISOTRON®. Down on the farm, for example, aerosol antiseptics and dressings for livestock . . . dairy-safe insecticides . . . and synthetic smoke for routing reluctant bees from the hive are among the many specialties that are paying profits to alert manufacturers.

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**A-M-R Chemical Company Inc.**
Brooklyn, N. Y.; Los Angeles, Calif.

**Associated Brands Inc.**
Brooklyn, New York

**G. Barr & Co.**
Chicago & New York

**Capital Packaging Co.**
Forest Park (Chicago), Ill.

**Claire Mfg. Co.**
Ft. Lauderdale, Fla.

**Chase Products Co.**
Broadview, Illinois

**Continental Filling Corporation**
Danville, Ill.; Hobart, Indiana

**Eveready Pressurized Products**
Cleveland, Ohio

**Gard Industries Inc.**
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## INDUSTRY CALENDAR

**Western Packaging & Materials Handling Exposition, Civic Auditorium, San Francisco. Aug. 11, 12 & 13.**

**New York Chapter of the Society of Cosmetic Chemists, Terrace Room, Hotel New Yorker, New York, Sept. 9.**

**Chemical Specialties Manufacturers Association, Meeting of Board of Governors, Executive Board and Committees, St. Moritz Hotel, New York, Sept. 15-16. (Association Members' Luncheon Sept. 15.)**

**Canadian Agricultural Chemicals Association, Chateau Frontenac, Quebec, Sept. 20-24.**

**Industrial & Building Sanitation - Maintenance Show and Conference, N. Y. Trade Show Building and New Yorker Hotel, New York, Sept. 22-24.**

**Society of Cosmetic Chemists, 6th annual cosmetic seminar, French Institute, New York, Sept. 23-24.**

**American Management Association Packaging Seminar on Packaging Line Layout, Hotel Astor, New York, Sept. 28-30.**

**CSMA Aerosol Industry Technical Clinic, New York, Hotel McAlpin, Oct. 17.**

**National Paint, Varnish & Lacquer Association, annual convention, Chalfonte-Haddon Hall, Atlantic City, N. J., October 19-21.**

**National Agricultural Chemicals Association, Sheraton Lick Hotel, French Lick, Ind. .....Oct. 21-23**

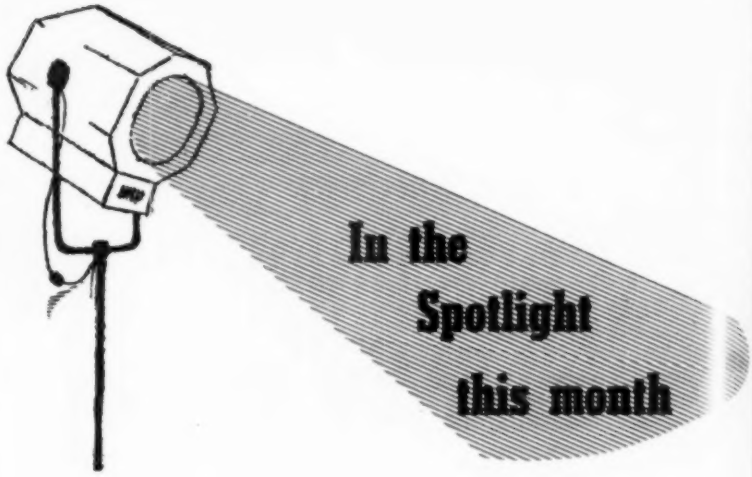
**CSMA Aerosol Industry Technical Clinic, Chicago (site to be announced), Oct. 24.**

**Canadian Manufacturers of Chemical Specialties, second annual meeting, Royal York Hotel, Toronto, Nov. 2-4.**

**Packaging Machinery Manufacturers Institute, trade show, New York Coliseum, New York. Nov. 17-20**

**Toilet Goods Association, winter meeting of Scientific Section, Waldorf Astoria Hotel, New York Dec. 1**

**Chemical Specialties Manufacturers Association, 46th annual meeting, Mayflower Hotel, Washington, D. C.....Dec. 7-9**




• **Product Liability for Aerosol Products . . .** An insurance expert, in an article on page 25, sheds new light on a subject long overlooked in packaging trade literature. Frank E. Burkett takes a long look at the economics of this type of insurance, and brings up to date recent policy changes with regard to prices and actual liability to the packager.

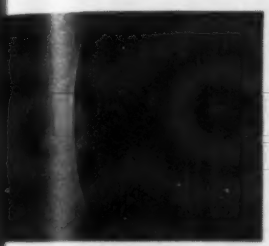
• **Gas Chromatography in the Aerosol Plant . . .** Continuing its coverage of this important facet of aerosol research and development, **Aerosol Age** presents a new technical discussion of how this tool may be practically used in the filler's laboratory. Story and pictures appear on page 20.

• **Technical Papers Highlight Paris Meeting of European Aerosol Federation . . .** Last month's first meeting of the European Federation of Aerosol Associations produced a number of significant technical papers and policy developments. A complete summary of each paper begins in an Aerosol Age exclusive on page 28.

• **Sprayon Products New Automatic Line . . .** A long-established Cleveland custom filler installs a brand-new automatic filling line capable of handling both large and small filling runs. A description, with pictures, of the company and its new installation begins on page 18.

• **Equipment Leasing for the Aerosol Industry . . .** A relatively new method of equipping an aerosol plant is discussed in detail by an official of a leading leasing company. His article begins on page 44.

Light Caramel



French Tan

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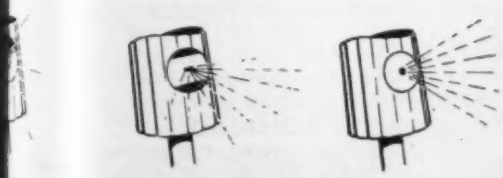

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1959

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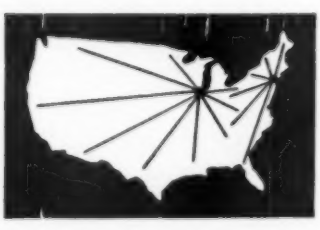
There are many other important pluses which *only* G. Barr & Company can offer. We would like to tell you about them, at your convenience and without obligation. Just contact our nearest office for facts.



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## G. BARR & COMPANY

PRIVATE LABEL AEROSOLS

**Dr. Paul A. Sanders** joined the Du Pont Company as a research chemist in 1940, after obtaining his Bachelor of Science and his Ph.D. degree in organic chemistry from the University of Minnesota.

Assigned to the company's Jackson Laboratory at Deepwater Point, N. J., Paul was active in studies leading to a number of patents in the fields of fluorescent whitening agents and stabilization of neoprene and other synthetic elastomers to light and heat. In 1953, he was assigned as a research chemist on aerosol propellents and aerosol applications and two years later joined the staff of the "Freon" Products Laboratory, where he has continued to work in the aerosol-propellents area.

Paul Sanders' work on water-in-oil emulsion systems for aerosol products has made possible a host of new aerosol products which were previously impractical. He and the many other chemists and technicians at the "Freon" Products Laboratory are continuously working to extend the frontiers of knowledge for the aerosol industry.

## "Formulation techniques developed by basic Du Pont research help our customers create new uses for aerosols"

*says Dr. Paul A. Sanders of Du Pont*

"Basic research at Du Pont is helping shape the future of the aerosol industry," says Paul Sanders of Du Pont's "Freon" Products Laboratory. "Recent work here on water-in-oil emulsions, for example, makes possible the preparation of water-based products in aerosol form which previously could not be sprayed satisfactorily. With this new system, disinfectants, pharmaceuticals, room deodorants and many more products compounded of water-soluble ingredients can now be dispensed in a misty spray from an aerosol. We have donated this information to the aerosol industry to help our customers create new markets for aerosols."

Basic research creating improved aerosol techniques is just one of the advantages you get at no extra cost when you buy propellents from Du Pont. Loaders or marketers of aerosol products can take advantage of many sales-building services which only Du Pont offers.

In marketing, Du Pont surveys help you expand sales of your products. With national advertising and promotion, Du Pont works continuously to build markets for aerosols, bringing you a steady flow of new customers. In technical service, Du Pont's know-how and experience can help you with aerosol development or solution of production problems. In manufacture of Freon* Du Pont makes aerosol propellents recognized throughout the industry for their quality, performance and properties. And only Du Pont gives you virtual local delivery service from three plants in the U. S., one in Canada and a network of warehouses.

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**FREON®** propellents

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Fit all fabricated 211's

# COSTS LESS

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# EDITORIALS

## CSMA's "Open House" Night . . .

THE Chemical Specialties Manufacturers Association is currently in the process of polling it members for their ideas on how to improve the company "open house" night, a feature of every CSMA convention. As the association has grown in membership, it has come to be realized that the once basically sound idea of each company having its own hospitality suite (on a given night) has gotten somewhat out of hand.

Aside from the ever growing number of suites (which put an increasing strain on convention delegates and company personnel manning the suites) there are a number of other inherent disadvantages:

1. The elevators, room service, and other facilities of most convention hotels are taxed to the limit, trying the patience of both guest and host.

2. Late reservations for suites (and sometimes early ones as well) very often result in seldom visited suites in some far corner of the hotel. Occasionally, prospective hosts even find themselves in neighboring hotels.

3. The hosts themselves, particularly key men in any given company, find themselves unable to get out of their own rooms to visit other hospitality suites.

Despite all these disadvantages, it doesn't yet appear that the membership is of the opinion that the hardships outweigh the benefits. However, it would appear that, with each new member (each being a prospective host) this so far favorable balance of opinion is further reduced, and the breaking point is being rapidly approached. Something needs to be done to save the situation, and CSMA members should carefully consider their replies and dispatch them promptly to the CSMA office.

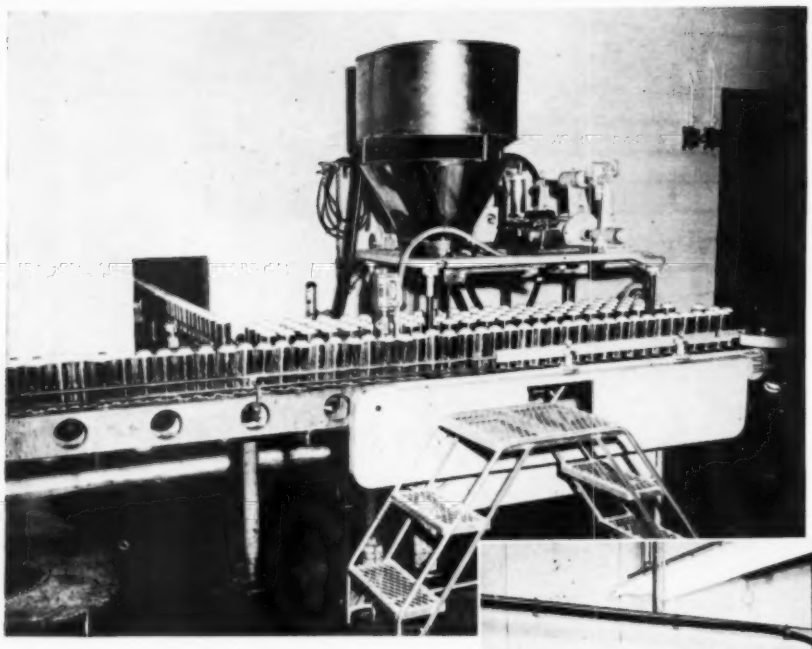
At the May meeting in Chicago, the one constructive suggestion made to alleviate the situation was, in our opinion, given short shrift. This suggestion (to stagger the open house period over two nights on an alphabetical or some other logical basis) has exceptional merit, particularly when one considers that most of the shortcomings listed above are immediately solved. It might be also considered that the night previous to the "open house night" is usually devoted primarily to entertaining anyway.

Whatever is done to correct this situation, the CSMA membership should take an active hand in making the decision. This can be done by way of constructive suggestions given on the current ballot.

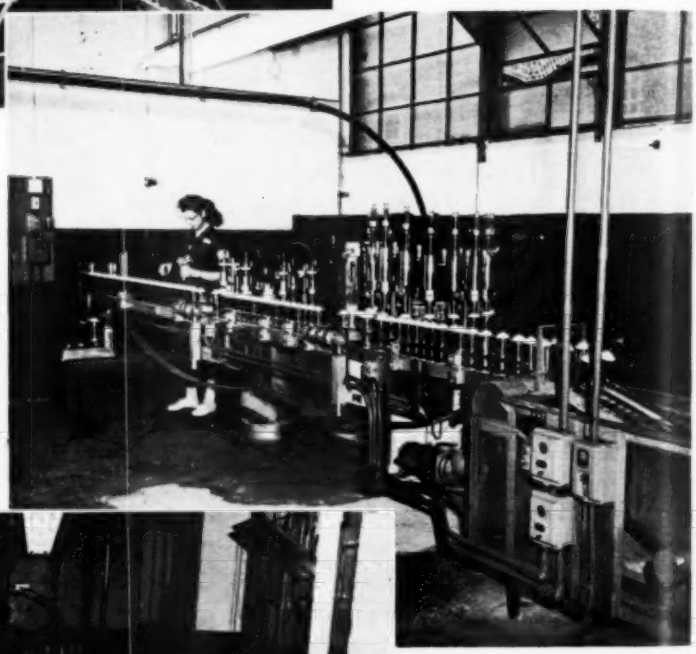
## Hydrocarbon Propellants . . .

OF late there has been much talk in the industry about the real or imagined dangers of pressurizing aerosols with propane, butane, and other hydrocarbon propellants, either alone or in mixtures with the conventional fluorinated hydrocarbon propellants. Aside from the dangers to the filler (of which he should be well aware and willing to accept *before* he ventures into this type of filling), there have been suggestions made that the hydrocarbon package is inherently dangerous (under certain specialized conditions) to the consumer himself.

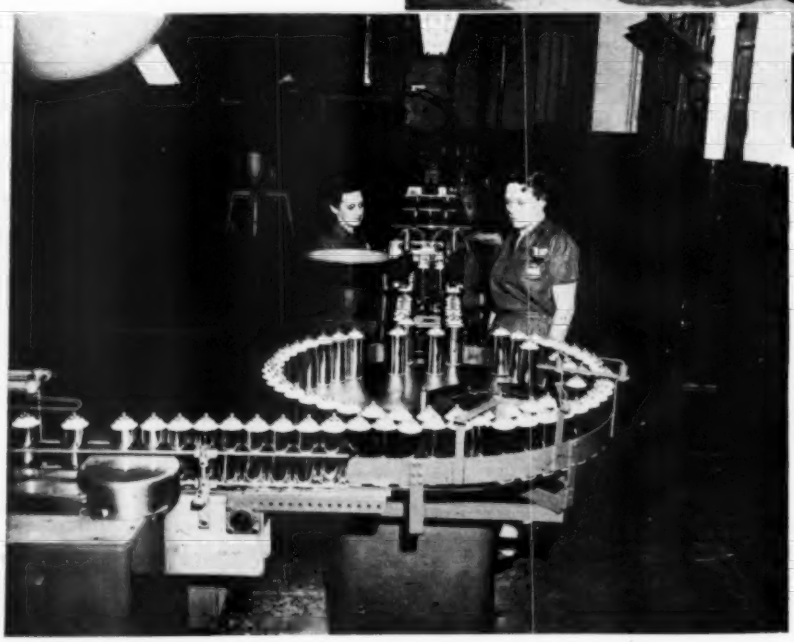
In an effort to determine whether there is such a danger to the consumer, *Aerosol Age* will undertake a survey of leading fillers to determine their views on the subject. Results of this survey should do much to "clear the air" on this controversy.



Beginning of Sprayon's new filling line is this Elgin ingredient filler, which is enclosed in an explosion-proof room. Here the product is placed into the cans, together with an agitator ball (where needed).



As the cans emerge through a port from the filling room the valves are inserted (the only manual operation), crimped, and then gassed. Alpha-Colton rotary crimper and gasser are the equipment. Water bath begins in right foreground.



After emerging from the water bath, the valve actuators are automatically applied (see cover photo), the containers cross a turn-table affair to change direction so they can be handled by the labeler (left foreground).

# Sprayon Products

*a highly experienced Cleveland filler unveils a new automatic aerosol line*

IF CURRENT INDUSTRY predictions have any real validity ( and they *have* in the past), aerosol paints may soon become one of the largest volume non-food aerosol product types on the U. S. market. The trend to suburban living, which has prompted all of the major paint marketers to introduce pressurized versions of their product lines, coupled with an ever growing "do-it-yourself" approach by both men and women, could easily push the aerosol paint market even beyond some of the more optimistic predictions by paint industry executives.

One company that has figured most prominently in this surge in aerosol paint sales is Sprayon Products, Inc., Cleveland, one of the first custom loaders in the field and a prime developer of aerosol paint formulations for scores of important paint marketing customers. Under Sprayon's tutelage, companies of the caliber of General Motors, Westinghouse, and others have adopted the aerosol package as the logical one for special touch-up paints for major appliances, marine engines, and other industrial and electrical equipment. Manufacturers of farm equipment, toys, metal furniture, and even automobiles have also jumped on the aerosol bandwagon.

Long a pioneer in pigmented aerosol finishes, over the past few years Sprayon has branched out into waxes, lubricants, silicones, anti-fogging liquid paint removers, clear plastic sprays, engine degreasers, oils, and many more household, industrial, and general products. The five filling lines of the company also have been used for room deodorants, shaving creams, pharmaceuticals, and some of the other more commonly known aerosol product types.

One recent Sprayon development is not a true aerosol package at all—but a hybrid spraying unit which depends on a replaceable can of propellant to supply the power source. Called the "Jet-Pak" spray gun, this unit sprays paints, polishes, cleaners, insecticides—in short any liquid that can be diluted enough to use in a conventional paint sprayer—all with no compressor, hose, or electric wire.

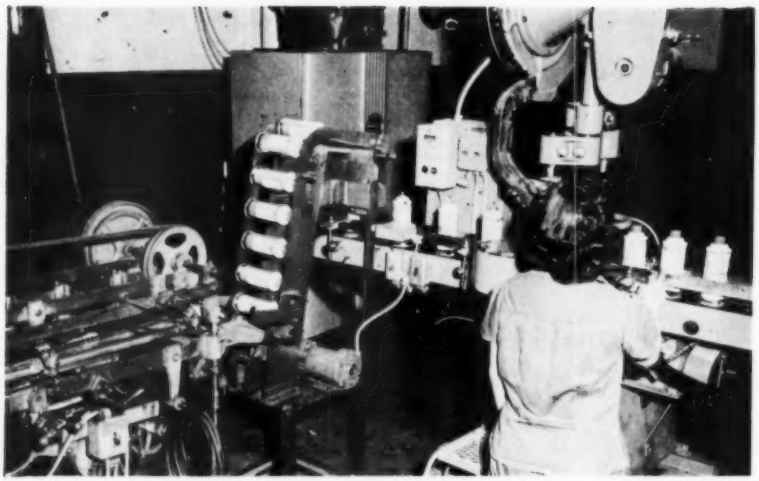
FOUNDED BY current president John G. Ellis in 1949, Sprayon started operations with one filling line, three workers, and 200 square feet of plant space. This first line was mainly "home-made"; that is, it consisted of conventional filling units rebuilt for aerosol use, plus Sprayon-designed charging and crimping equipment. Over the last ten years, Sprayon has been expanding onto adjoining industrial property and presently occupies more than 30,000 square feet of manufacturing space; plus nearly 20,000 square feet more of warehouse space. The labor force now totals more than 150. A second filling line was added in 1952; a third in 1954; a fourth in 1956; and the fifth in May of this year.

This new filling line is especially noteworthy, since, with the exception of the valve inserting operation, it is fully automatic. Many operations hitherto done manually, such as actuator button application and turn-over prior to labeler feeding, are now performed on special equipment designed by the company's engineering staff.

To reduce the possibility of fire or explosion, the mixing and ingredient-filling operation is completed in a carefully ventilated, explosion-proof room. Here the product is mixed, fed into an Elgin filler, and then placed in the cans, along with an agitating ball.

Next the ingredient-filled cans travel by conveyor through a port into the main aerosol handling room, where an Alpha-Colton rotary crimper crimps the valve mounting cup and another Colton unit, a rotary gasser, charges the cans with propellant. From there the cans proceed automatically through the water bath to Sprayon's own actuator inserter, through the automatic labeler, the Consolidated Packaging Machinery capper, and finally to an automatic cartoner.

Queried as to why he chose pressure filling for a high-speed paint line, Mr. Ellis said that the new line is geared mainly for small-size orders, in which Sprayon has specialized since its inception. "The entire line can be changed over from one color to another, or from one formulation to another, in about five minutes. This obviously gives us far more efficiency, less shut-down time, and less waste of working time by the line personnel. For large volume orders we use an older Mojonnier cold fill line, and for



On the new automatic filling line, an automatic directional changer (center) takes the containers off the labeler (left) and places them upright so they can be capped by the Consolidated Packaging Machinery capper (right). An inspector periodically checks on this operation.

some of the small and large volume work we can use one of the other three smaller filling lines."

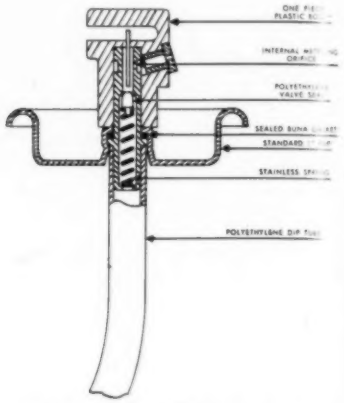
In addition to its obvious skills in aerosol equipment engineering, Sprayon's research, product formulation, and quality control section need take a back seat to that of no other company. Over the past ten years the company's staff has developed 10,000 carefully coded and indexed formulations. Each of these is filed away with a color sample, so that the formulation can be duplicated exactly if the customer should re-order years later.

A staff of six chemists and paint technicians works full time in the laboratory, dividing their time between formulation development and quality control. The quality control section studies samples from each filling order, checking them constantly for color stability, consistency of spray pattern, seeding, etc. To "umpire" in color matching decisions, the technicians use a MacBeth light, a unit commonly seen in the laboratories of major paint manufacturers, but seldom installed in an aerosol laboratory.

Besides this in-plant laboratory, Sprayon has established a fellowship at Cleveland's John Carroll University, where two chemists work on complicated problems of aerosol chemistry and physics.

This combined in-plant and college fellowship research program has successfully recorded a number of aerosol "firsts" for the company. For instance, the company claims to have been the first to package nitrocellulose lacquers in pressurized packages, the first with vinyl compounds, and one of the pioneers of water-base products. Sprayon has also done much of the initial developmental work on such unusual specialties as stenciling compounds, self-spraying surgical dressings, and daylight fluorescent colors.

Mr. Ellis credits much of the success of the company with all these product types to the "Danvern" aerosol valve, which was developed exclusively for Sprayon by the late J. S. Crowley about eight years ago. Manufacture of this valve makes Sprayon the only filler in the U. S. that still makes its own aerosol valve (Bridgeport Brass did in the early days of aerosol packaging). Mr. Ellis points out: "Because of price factors and limited production, these valves are not sold to domestic aerosol marketers, though we do sell some to overseas firms. It should be mentioned that this valve was developed at a time when domestically produced valves were either unsuitable for our products or hard to get. Both these shortcomings have since been largely




A sketch of the "Danvern" aerosol valve.

corrected, but we continue to produce the valve because it has proven superior for protective coating formulations."

Sprayon's services to the customer don't end after the firm develops the formula and packages the product. The company makes available a variety of sales and marketing aids for the promotion of the product, including a sound movie on how to use aerosol paints—plus a wide variety of promotional brochures and bulletins.

Mr. Ellis is a firm advocate of aero-

Part of Sprayon's color matching and development laboratory. One laboratory assistant is coding the paint samples to facilitate future reorders, while another codes formulations. The Macbeth light is seen in the center rear.

sol product promotion, and deplores the current trend toward price cutting among fillers and marketers. "With a few exceptions," he declares, "there is no spray paint advertising in national magazines or on television programs—despite the fact that this is a good selling product marketed by national companies with substantial advertising budgets. Price cutting all along the line has served to eliminate advertising and other promotional expenditures that might go far toward selling paint products to an ever increasing number of new customers. Current price cutting trends among aerosol custom fillers make little sense, and our company has always put quality control procedures and high quality filling techniques ahead of the price considerations."

This policy appears to be paying off, for Sprayon Products is prospering. Besides the shining new automatic line, the company has plans in process to build a brand-new plant on the outskirts of Cleveland. It is in the process of organizing a New York and a Chicago sales office to better serve its customers in those areas. And, what is probably most important to future growth of the industry, Sprayon is ever expanding its role as a recruiter of new volume customers to aerosol product packaging.★

# Crash of Company Plane Kills 8 Continental Can Executives

JOHN R. "JACK" WALLACE, product sales manager of non-food cans for Continental Can Co., was one of eight Continental Can Company executives and two pilots killed in the crash of a company plane six miles east of Marion, Ohio, July 3rd. The plane, a converted two-engine B-26 Martin bomber, hurtled out of an overcast sky into a wheat field after the pilot attempted to skirt a thunderstorm north of Marion.

In addition to Mr. Wallace, the company's executives, all members of its Metal Division returning from a Chicago sales conference, were A. W. Sherwood, Jr., Eastern Division sales manager of non-food cans and steel containers; M. D. Sandine, Baltimore, general manager of the Mid-Eastern District; J. de Bliek, manager of the company's Passaic, N. J. can plant; H. G. Schier, manager of equipment maintenance; J. M. Kelly, Eastern Division manager of production engineering; W. J. Mutschler, general manager of production engineering; and R. I. Weimerskirch, Jr., manager of products and materials standards. The two company pilots killed in the crash were John R. Dunham and Donald Martin.

Mr. Wallace, 47, was a well-known figure at meetings of the Chemical Specialties Manufacturers Association and other trade associations and had been with the company for 25 years. He was a member of three important aerosol committees in CSMA: the Aerosol Commercial Standards Committee, the Aerosol Publicity Committee, and the Aerosol Division Membership Committee. A native of Wheeling, W. Va., he was a graduate of the University of West Virginia and lived in Pound Ridge, N. Y. He leaves his wife, Margaret; two sons, John, 18, and William, 15, and a daughter, Jean, 12.

Abbot W. Sherwood, Jr., 47, had been with Continental Can 23 years.

Abbott Sherwood and J. R. Wallace (the latter photographed during the Aerosol Division Supermarket last Dec.).

Before his appointment in 1956 as sales manager of non-food cans and steel containers for the Eastern Division, he was assistant district sales manager in New York and, prior to that, a salesman in both New York and Houston. A graduate of Phillips Exeter Academy and Harvard, he served in the Air Force as a lieutenant colonel in World War II. He is survived by his wife and three children, residing at 99 Bellewood Ave., Dobbs Ferry, N. Y.

Marshall D. Sandine, 48, was with the company for 11 years. Before becoming general manager of the Mid-Eastern District, he was St. Louis plant manager, Coffeyville general manager, and superintendent and plant manager in Syracuse. Mr. Sandine, who resided in Baltimore, was a widower.

Jacob De Bliek, 44, had been with the company for 22 years. Before he assumed his plant manager position in Passaic, he was an assistant plant manager and held various foreman capacities. He is survived by his wife and two daughters, living in Clifton, N. J.

Raymond I. Weimerskirch, Jr., 47, had been a Continental employee for 25 years. In 1956, he became manager of products and materials standards. Before that appointment, he was general manager of quality control, assistant to the manager of metallic container research, and a research section chief and chemist. He leaves a wife and four daughters living in Woodcliff Lake, N. J.

Henry G. Schier, 58, was a Continental Can employee for 34 years, and was manager of equipment maintenance. He is survived by his wife and daughter who reside at Woodridge, N. J.

Justin M. Kelly, 46, had been with Continental for seven years. He became manager of production engineering for the Eastern Division in

(*Continued on Page* 78)

# *Gas Chromatography* in the Aerosol Laboratory

THE gas chromatograph and vapor phase chromatography have been receiving considerable praise during the past few years, particularly in the aerosol industry. The purpose of this report is not to attempt to claim some new and dynamic discovery which will revolutionize propellant analysis, but rather to make available a technique and the details of an accessory apparatus which enables one to effect a simplified sampling operation and resulting analysis!

In the past, the methods of determining propellant composition, other than by use of the chromatograph, have been primarily (1) densimetric or specific gravity determinations using the pycnometer and other allied instruments, and (2) determination of the boiling point of the liquid. These two basic methods produce reasonably accurate results, but as compared to chromatographic analysis, are quite inadequate. The accuracy of these methods is limited to plus or minus 1%, or more, and small quantities of related compounds, if present, are virtually undetectable.

The present method of sample introduction of aerosol propellants into the chromatograph is difficult. A special syringe is used to introduce a liquid sample directly into the carrier gas stream. Naturally, this method necessitates chilling of the propellant and the syringe to a temperature below the boiling point of that propellant or propellant mixture. In the case of some of the low boilers (Propellants 12, 22, propane, etc.), this poses quite a problem. Mixtures of these and other propellants intensify the problem. Frequently, the more volatile components are partially, and in some instances, totally lost, due to the inability of the technician to maintain a sufficiently low temperature during the course of introducing the sample into the chromatograph. In addition, the low boilers have a refrigerant effect which upsets the temperature stability of the chromatograph.

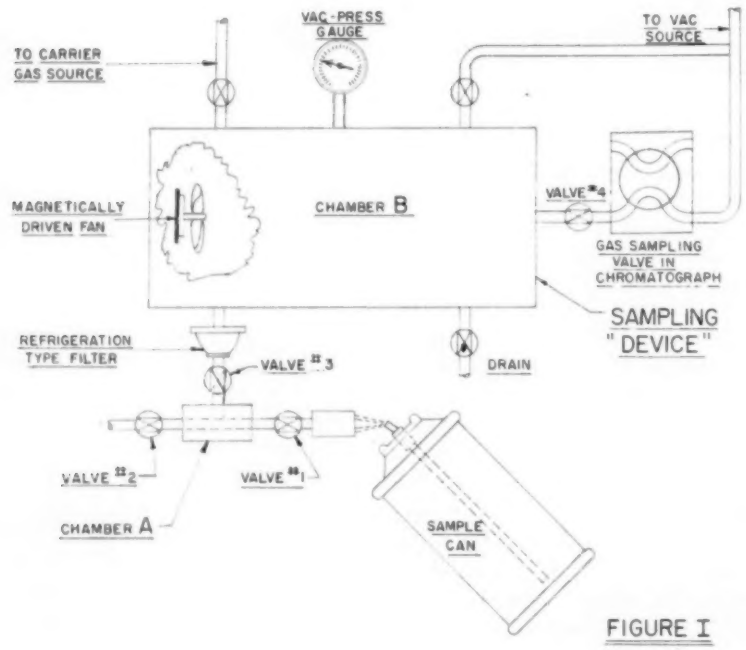



FIGURE I

Another common method of chromatographic sampling is to introduce a vapor phase sample from the headspace of a closed container. This method also leaves much to be desired. The primary fault of this method is that, in system of two or more compounds (or in this instance, propellants) the composition of the headspace is dependent upon many variables; the vapor pressure of the compounds, the temperature of the liquid and gaseous phases, the molecular weight of the propellants the pressure in the headspace, etc. Needless to say, the propellants involved are not similar enough to fulfill all of these requirements. This method necessitates running a determination on a standard of known composition and applying correction factor accordingly. It is also necessary to control closely the temperature of the vapor phase of the sample can, in order to insure good correlation with

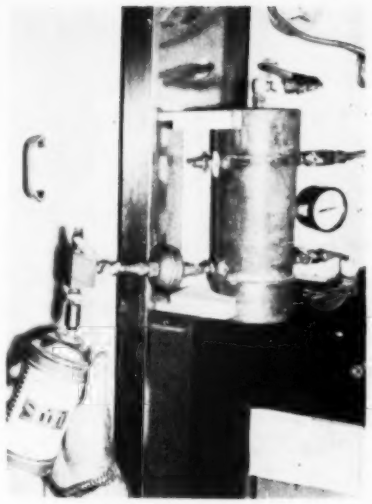
**By T. A. Thonet**

Continental Filling Corp.
Danville, Ill.

the standard, and reproducibility with later determinations. Water baths help to alleviate this problem. Unfortunately, bleeding of the headspace results in the volatilization of the liquid in an attempt to establish a pressure equilibrium. This volatilization or evaporation of liquid produces a resultant chilling effect. In certain instances, particularly when the low boilers are employed, this chilling or refrigerant characteristic is severe enough to offset the effects of a water bath.

Figure I, depicts a sampling device which solves the above problems and offers an escape from correction factors and literally allows a liquid sample determination to be accomplished without the accompanying chilling effects and other deterrents! This device also allows hydro-carbon-halocarbon mixtures (which have a great difference in molecular weights) to be analyzed simply, accurately and without the use of correction factors. Another advantage gained by using the device is that it is not necessary to establish a sample temperature control system, because the composition of the liquid sample will remain essentially the same (within a closed container) over a fairly wide temperature range. The sampling device illustrated in Figure I consists of two chambers—Chamber "A" and Chamber "B." Chamber "A" should be constructed so that the volume lies within the range of 1.0 to 1.5 cubic centimeters. The volume of Chamber "B" should be approximately 550 times that of Chamber "A." Chamber "B" should be constructed so as to contain a fan or some other means of circulation to eliminate stratification of the gaseous components and insure uniformity throughout the chamber. The combination vacuum-pressure gauge and valves should be affixed as depicted.

The general method of sampling with this device is as follows: all valves on Chambers "A" and "B" are closed and Chamber "B" is evacuated to the maximum vacuum or minimum pressure obtainable with any good, high vacuum pump (28-30) inches of mercury). Chamber "B" is then pressurized and thoroughly purged with carrier gas and again evacuated to the maximum. A sample can is then attached to the sampling device by means of a probe-like appendage which fits securely inside the valve stem.

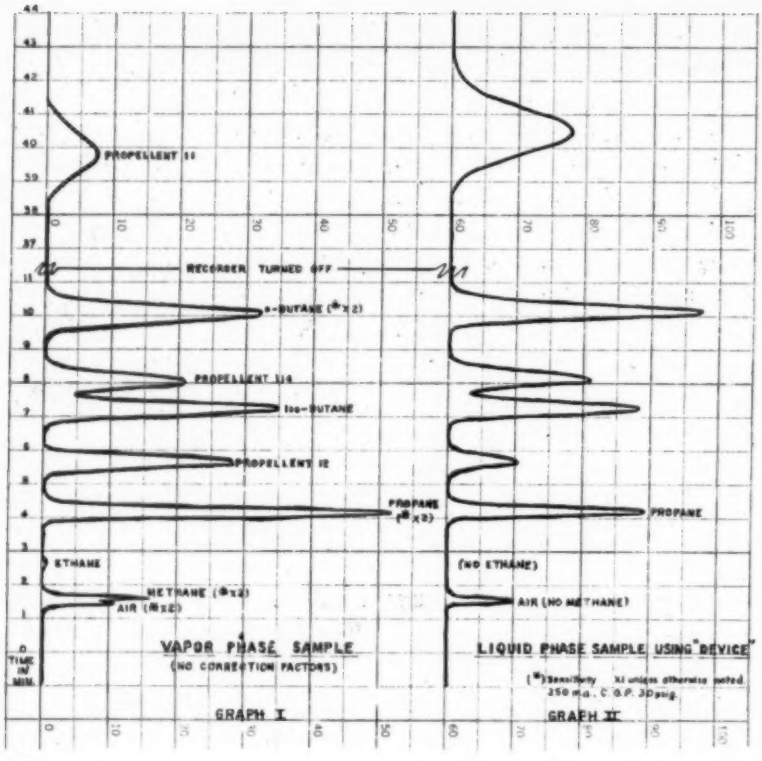


Photograph of the sampling device in use

The sample can valve, equipped with a dip tube and indexed cup to establish the dip tube position, is then actuated, allowing the liquid to flow to valve 1 of Chamber "A." Valve 1 is opened and valve 2 is then "cracked" to allow any entrapped air to escape. A sufficient quantity of sample is allowed to escape through valve 2 to insure

TABLE I

| Component | Mole Percent in known (Sample can) | Weight Percent in known | Calculated Mole Percent Liquid Phase sample with device | Calculated Weight Percent Liquid Phase sample with device | Calculated Mole Percent Vapor Phase sample (No Correction factor applied) | Calculated Weight Percent Vapor Phase sample (No Correction factor applied) |
|---|---|---|---|---|---|---|
| Methane | trace-less than .01 | trace-less than .001 | 0.00 | 0.00 | 3.49 | .10 |
| Ethane | trace-less than .0005 | trace-less than .0001 | 0.00 | 0.00 | .11 | .05 |
| Propane | 7.12 | 3.36 | 7.16 | 3.37 | 25.41 | 15.28 |
| Propellant 12 | 3.45 | 4.45 | 3.47 | 4.46 | 9.09 | 14.98 |
| Iso-Butane | 11.35 | 7.04 | 11.37 | 7.05 | 14.28 | 11.31 |
| Propellant 114 | 9.73 | 17.75 | 9.72 | 17.74 | 9.95 | 23.18 |
| n-Butane | 38.80 | 24.07 | 38.77 | 24.06 | 32.79 | 25.97 |
| Propellant 11 | 29.55 | 43.33 | 29.51 | 43.32 | 4.88 | 9.13 |




that a representative sample is obtained. A 5-6 second bleed is adequate. Then valve 2 is closed. With the sample still actuated, valve 1 is closed thus entrapping a liquid sample within Chamber "A." Valve 3 is opened, allowing the liquid to volatilize and escape into Chamber "B."

This expansion usually produces a rise in pressure within Chamber "B" of roughly ten inches of mercury. This rise in pressure (or decrease in vacuum) results in Chamber "B" having a positive pressure with respect to the chromatograph sampling valve which is attached directly to the vacuum source. The fan in Chamber "B" is actuated and after about 30 seconds of circulation, valve 4 is opened, resulting in a flow of sample to pass through the sampling valve.

By observing the gauge on Chamber "B," a sample may be taken at any given partial pressure. Care should be exercised to pay particular attention to the partial pressure at the time of sampling if a return is anticipated which would require a reproducible sample in close correlation with the initial run. Once the sample has been taken, normal procedures for chromatographic analyses follow. The chambers may, at that time, be evacuated and purged in preparation for any subsequent determinations.

Graph I depicts a typical chromatogram of a vapor phase determination as earlier described. Graph II is a chromatogram of a liquid phase sample taken by means of the device from the same container as the vapor phase determination. The actual composition of the sample which was run may be compared in Table I to the calculated composition with both the old vapor phase sampling technique (no correction factors applied) and liquid sampling with the device. By examining Table I, and Graphs I & II, the advantages of this method become quite apparent!

The method of determining the qualitative composition remains the same as in any other chromatographic determination. The various components are released by the column at various times, dependent upon the boiling point of each component, its molecular configuration, etc.

The column most frequently employed is a twelve foot di-n-butyl maleate column. Sensitivity and resolution of both hydrocarbons and halocarbons are excellent with this column. A typical "time-table" of the retention times for this column is listed in Table II.

Quantitative determinations are also made in the normal fashion. The area of each component peak divided by the sum of the areas of all the components gives the mole percentage of each component, or:

$$\frac{100A_x}{A_x + A_y + \ldots A_n} = M_x\,\%$$

where:

$A_x$ = Area of Peak of Component x

$A_y$ = Area of Peak of Component y

$M_x\%$ = Mole Percent of Component x

To determine the percentage by weight:

(*Continued on page 75*)

TABLE II

Approximate Retention time of Various Propellants in a 12' Di-n-Butyl Maleate Column @ 40°C, Helium Carrier Gas @ 30 p.s.i.g., 250 ma.

| *Component* | *Retention Time* |
|---|---|
| Air | 1 min. 20 sec. |
| Methane | 1 min. 25 sec. |
| Ethane | 2 min. 10 sec. |
| Propane | 3 min. 50 sec. |
| Propellant 12 | 5 min. 35 sec. |
| Iso-Butane | 6 min. 50 sec. |
| Propellant 114 | 7 min. 20 sec. |
| n-Butane | 9 min. 10 sec. |
| Propellant 11 | 38 min. 10 sec. |
| Propellant 113 | 52 min. 15 sec. |

**Jet-Aer Spray Aluminum Wax** is a new product of Jet-Aer, Inc., Paterson, N.J. marketer. Packaged in American Can Co. 12-ounce container, it will retail for $1.98 in hardware, department and variety stores. It will reportedly prevent rust, pitting, discoloration, and corrosion.

Latest addition to the industrial line of Crown Industrial Products Co., Woodstock, Ill., is an all-purpose **Cutting Oil** in a six and 16-ounce container with a Newman-Green valve. Product is said to meet all qualifications for a heavy-duty tapping and cutting oil.

**DuPont Jet Clene** upholstery cleaner is a new addition to the company's No. "7" line of products. Equipped with a Clayton foam valve, the product is packaged in an American Can container. Custom packaging is by DeMert & Dougherty, Chicago.

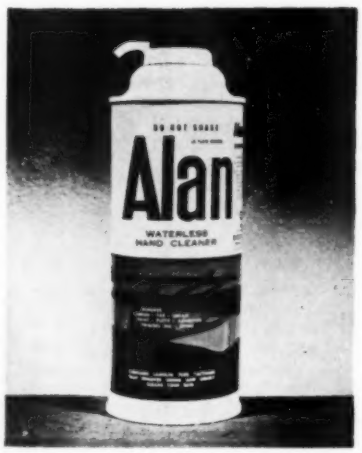
Already one of the most popular spot removers in Europe is **K2r Fleckenspray**, presently being marketed in Germany, Switzerland, and Italy. Fitted with a Precision valve, it comes in a six-ounce aluminum monoblock can made by Vereinigte Deutsche Mettalwerke AG.

# NEW PRODUCTS AND PACKAGES

New British aerosol fire extinguisher is this unit introduced recently by Firemaster Extinguisher Ltd., Bromley, Kent. Retailing at 15 shillings ($2.10), it contains 20 ounces of a special dry powder formulation, which is said to be non-poisonous, harmless to carpets and fabrics, and safe to use on electrical fires.

**Spray Tan,** one of the most popular European products, and **Bluet** are two new products recently introduced in Italy. **Spray Tan,** marketed by Cosmopolitan Brands, Inc., Piacenza, uses a specially made Risdon foam actuator with Risdon's standard valve. Container is one piece aluminum. **Bluet,** a personal deodorant is manufactured by H. Roberts, Florence, in a plastic-coated glass container made by H. Desjonqueres, S. A., Paris. Valve is also Risdon, made by Solfrene, A.p.A., Risdon licensee in Milan.

**Rust-Oleum** in a new 16-ounce container has been introduced by Rust-Oleum Corp., Evanston, Ill., in 16 colors. Suggested retail price is $1.89. Colors available include all basic hues plus pastel shades.




**Alan** waterless hand cleaner is a new nitrogen propelled product introduced by Redram Chemical Co., Brooklyn, N.Y. Precision valve-equipped product will retail at $1.39 for the 16-ounce container. One prime ingredient is "Actamer," trade name of Monsanto for its Bitholonal.

# Product Liability

## *for the aerosol industry*

**By Frank E. Burkett**

Assistant Chief Engineer
Liberty Mutual Insurance Co.
Lynbrook, N. Y.

THE IMPORTANCE OF product liability insurance coverage cannot be overemphasized. Over the years, the public has become more and more claims conscious, and whenever anything in the way of an accident happens, they immediately take action, usually legal, to make somebody pay for their *real* or *imagined* injuries or damages.

Even though the aerosol industry's accident injury record (so far as the public is concerned), has been excellent, there have been remote cases where costly physical injuries have occurred. The problem is similar to lightning — just as no one can tell when it will strike, neither can it be predicted when some incident will occur during use of an aerosol product. We must remember that the product is activated by vapor pressure, and that this pressure remains in the container even after the product has been exhausted. Also, the vapor pressure in the container increases as temperature rises.

As is well known to any marketer, there are several reasons for package failure during the life of the product. Although all units on the market have been tested to 130°F. this does not mean that the customer (either intentionally or accidentally) will not subject the product to higher temperatures

. The container may be left on a stove, radiator or in a parked automobile, where the pressure will increase beyond the strength of the can. When this occurs, the contents are sprayed and the can is projected as a missile, and can cause serious injuries. *This is the major cause of the most serious accidents.*

2. Prolonged storage of the units at increased temperatures and consequently increased pressure can, and often does, lead to failure of the side seam due to solder creep.

3. Failure of the valve would cause damage due to the flow of the contents over the immediate area. Personal injuries ordinarily would be limited to someone in the path being struck by the valve.

4. Aerosols packaged in plain glass bottles create a serious accident potential, as glass fragments are projected at failure or breakage. Scratches on the bottle produce stress concentration points which may weaken it, thus further reducing the safety factor. The protection of glass dispensers can be achieved by composite outers; by metallic outers; and by plastic coatings.

These facts should serve as a reminder of why the aerosol industry needs products liability insurance coverage. As an example, assume your filler plant is located in Maine and the consumer lives in Southern California. While the consumer is in possession of your product, an accident occurs and she is injured and starts seeking remuneration. Unless you are covered by product liability insurance, you, a busy executive, would have to arrange time to investigate this case 3,000 miles from your business! The series of events leading up to this long trip would probably go something like this:

1. The consumer, after having been treated for the injury, would no doubt also see her lawyer and relate to him the facts favorable to her.
2. He would contact and undoubtedly start action against the merchant from whom she purchased the aerosol product.
3. The merchant naturally wants no part of this, so he looks to the company shown on the label as the party responsible.
4. The company, a large financial institution, with very special legal talents at its command, says it isn't its fault (arguing that it had merely provided the formula to be packaged by a filling contractor). The filler, it would contend, is the one *really* responsible for this incident.

5. So now, months after the accident, you are informed of this claim. If you are one of the fortunate fillers who carries product liability insurance with a reliable company, you turn the facts in the case over to it, and experienced claims investigators begin their work. If you have no coverage of this type, then you may have to pack that suitcase and investigate the claim yourself. Because you are probably untrained in this sort of thing, the consumer's lawyer could conceivably collect an excessive settlement from you.
6. Liberty Mutual has offices in 146 cities in the United States, and its claims people could be on the job before you had made your travel reservations. Trained representatives, after determining all the facts related to the accident, will then take steps to settle the case. The company may deny your responsibility entirely, if the facts warrant (or should the case go to court in suit), might settle the case at a much lower figure than you could hope to reach as an individual.

A BRIEF description of products liability insurance may help you to better understand some of its many ramifications:

As is true with many other types of liability imposed by law, most businessmen now realize the danger of being held liable for personal injury or property damage caused by their products or workmanship. The problem of the insurance man is either to show a client that his existing liability insurance *does not* protect him completely against this hazard, or to work out adequate product liability protection with complicated rules and forms and often great variations of opinion among underwriters.

The new standardized Schedule General Liability provisions include, in both the owners, landlords and tenants and the manufacturers and contractors forms, product liability insuring clauses and conditions. Although only a few changes were made from practices previously prescribed in the manuals in connection with product liability insurance, the existence of standard provisions should go a long way toward clearing up the confusion which has existed in this phase of liability insurance for many years.

The following definition of the products liability hazard is in the new Schedule Liability policies. The owners, landlords and tenants and the manufacturers and contractors forms are identical on this point:

> Goods or products manufactured, sold, handled or distributed by the named insured or by others trading under this name, if the accident occurs after possession of such goods or products has been relinquished to others by the named insured or by others trading under his name and if such accident occurs away from premises owned, rented or controlled by the named insured or on premises for which the classification stated in Division 1 of item 4 of the declaration excludes any part of the foregoing; provided, such goods or products shall be deemed to include any container thereof other than a vehicle, but shall not include any vending machine or any property, other than such container, rented to or located for use of others, but not sold.

### Where Does Product Coverage Begin?

An important question, frequently argued, is the relation of product liability insurance to other liability insurance—or, more specifically, where other liability coverage leaves off and the product liability policy or section takes on.

For most—but not all—risks, public liability insurance applies until the product in question has both been turned over to another party and left the premises of the insured, or until work away from the insured's premises has been completed.

### What Claims Are Covered?

Since a claim involving a product may not arise until some time after the product is manufactured or sold, the time element in product liability insurance has caused much discussion. For a number of years, the intent has been that the date of the accident or alleged accident shall control. The present policy provisions make this clear, because product liability insurance is subject to the general condition that the policy applies only "to accidents which occur during the policy period". Thus, if the accident is alleged to have occurred while the policy is in force, the claim is covered, regardless of when the product was made or sold.

For example, let us assume a product was manufactured in 1953, when the insured did not carry any product liability insurance. It was sold in 1954, when product liability insurance was carried in Company A. The purchaser sues the insured for an accident involving this product, which he claims occurred in 1955, when product liability insurance was carried in Company B.

If insurance has been written in conformity with the present rule, Company B must defend the claim and pay the judgment (if the insured is held liable).

### Basis of Premiums

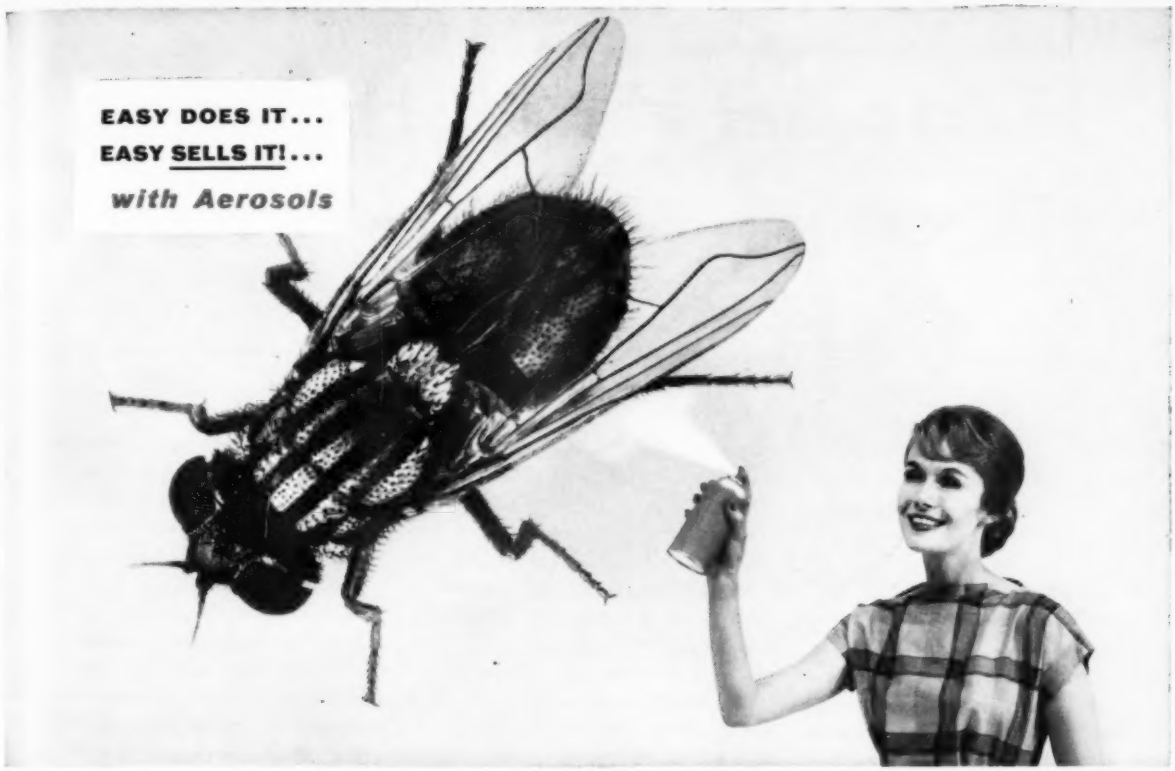
*Sales:* This is the most common basis. The rate applies to each $1,000 of gross sales, including taxes, of all goods and products sold or distributed by the insured during the policy period, including installation, service and repair charges.

*Receipts:* Where this basis is indicated, the rate is applied to each $1,000 of gross receipts, including taxes, subject to the same exception of sales taxes. This basis applies mainly to insureds doing service work.

*Units:* Where this applies, the manual indicates after the classification exactly what unit is employed. For example, for a flour manufacturer, under Code 6024, the rate is applied for each 100 tons of flour.

Product liability insurance provides protection for bodily injury and property damage claims arising out of the use of manufactured products. Like other forms of liability insurance (automobile liability, owners', landlords' and tenants' public liability, etc.) the coverage provides payment only for those claims for damage for which the manufacturer is

(*Continued on Page* 78)




# The Magic Touch of Aerosol Packaging expands market for Household Insecticides

Growing like topsy! That's what's happening to the market for household insecticides—and to aerosol household insecticides in particular.

As recently as 1953, total household insecticide sales were approximately $100 million. In 1958, the market grew to $165 million, and is expected to hit $204 million by 1963. The two main types of aerosol insecticides —space and residual sprays—have shown correspondingly dramatic growth. In 1953, space sprays accounted for $41.2 million and residuals for $4.8 million. In 1958, space sprays hit $48.9 million and residuals $26.2 million. And anticipated sales for 1963 are: space sprays, $57 million; residual sprays, $38 million.*

It's never too late to get in on a growing market. So why not plan on capturing your share now? If you have an insecticide product—*or any other product* that can be sprayed, poured, brushed, dusted or daubed—the following useful services from General Chemical can help you get started in aerosol packaging.

**Market Information**—Helpful facts and figures on the aerosol market are available to present and potential aerosol marketers.

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For further information—or if you would like to arrange for a special presentation—write today to "Genetron" Department, General Chemical Division, Allied Chemical Corporation.

*All figures compiled by Market Surveys Department General Chemical Division, Allied Chemical Corporation

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# Technical Papers Highlight European Meeting in Paris

RIVALLING any U. S. aerosol conference in attendance, technical papers, general coverage, and pleasantness of surrounding, the first International Symposium on Aerosols, held in Paris on June 26, was truly "international" in every respect. During the same week and using many of the same facilities, Paris honored an International Conference on the Chemical Arts, which, in part, may account for the record number of 375 persons from all parts of the world who enrolled for the aerosol sessions. In any event, it was a highly successful meeting, highlighted by some excellent technical papers.

The symposium marked the first general meeting of the new Federation of European Aerosol Associations—Fédération Européenne des Associations Aérosols — (*Aerosol Age, June* 1959, page 40), but was actually sponsored and planned by the Aerosol Association of France (Comité Francais des Aérosols, 51 rue Boursault, Paris 17), to which belongs the principal credit. The formal meeting was held in the large conference hall of the Maison de la Chimie and the attractive foyer, decorated with many interesting exhibits on cans, valves, propellants and filled products — particularly perfumes—provided an excellent site for the international gathering.

Prologue to the meeting was a June 25th trip to the plant of S.A.F.C.A. at Sérézin-du-Rhone, near Lyons, made by 75 of the participants. SAFCA is one of France's leading valve manufacturers, and also was a large three-line loading station and its own manufacture of filling equipment. With a frankness unusual on the Continent (where mystery and technical secrets are still almost ritualistic) the SAFCA management showed three groups with guides (French, German and English) through its entire operation, answering all questions. The parts for the valve, a three-part all-plastic model, are molded and assembled within the plant which has a capacity of 50,000 units per day. The smaller and more difficult parts are produced under strict specification and inspection at the SAFCA plant, and then are shipped to SAFCA's licensees in Italy, England, and Brazil. SAFCA also has licensees in Spain and the Argentine, thus being the first valve manufacturer — after Precision and Risdon—to operate on an international scale. Its automatic filling line, rated at 30 per minute, operates on the cold principle, but with installation of a propellant charger could easily be converted to pressure loading. The company's three lines can turn out 40,000 units per day, and as one of France's leading contract loaders, it has been operating at capacity for some time. A more complete report on the entire operation will appear in a later issue of this magazine.

Following the plant inspection visit, the group was entertained with typical French hospitality at a luncheon in a near-by inn by the SAFCA management, with Rene Pollet, president of SAFCA, presiding.

The epilogue of the meeting on Saturday was a cocktail party given for all guests by Pechiney, D'Ugine, and Solvay, three large chemical manufacturers and propellant suppliers. The evening before, all guests and their ladies (about 500 in all) gathered at the Pavillon Dauphine in the Bois de Boulogne for a delicious dinner and dancing and Paris was—as only Paris can be—on a warm summer night.

Yrjo K. K. Talvitie, Francois Harlan, Madame Franck, Wilhelm Staehle, Madame Harlan, Claude Franck, and Madame Talvitie at the banquet.

IN his address of welcome on Friday morning, Claude Franck president of the French Association,

**By Dr. Tom C. Clark**
Aerosol Age European Representative
Druk-Pak, Ltd., Zurich

Gerald Mayer (Precision Valve International), president of the FEA, opens the meeting while Dr. P. H. Witjens (Polak & Schwarz International) waits to deliver his paper.

pointed out some of Europe's significant contributions so far to the aerosol industry. Citing a French patent granted in 1923, covering a "metallic container for storing and projecting liquids under pressure (containing ethyl chloride or other liquids, under pressure mixed with perfumes)," and also the 1927 Rotheim/Norwegian patent, he called Europe "the true birthplace of aerosols." He also mentioned Mr. Ramis's first work with nitrogen, Professor Hasse's with transparent dry ice, Estignard Bluard's original work in 1948 with aerosol foams, the first "mono-block" aluminum cans produced in Italy, and the first published technical work on aerosols, "Pressure Packaging" by Herzka and Pickthall in England. A formidable group of "firsts," and all from Europe!

Remarking that "no one is a prophet in his own country," Mr. Franck went on to pose the question of why it was necessary for the U. S. to point the way for the commercial application of these inventions and why it was that country that was able to improve on the ideas. He laid the answer at the door of an old, divided Europe, mentioning the new European communities, including the new European Aerosol Federation, as examples of the new spirit without which Europe may not be able to survive. In conclusion, he pointed out the importance of the conference for the industry, and expressed the hope the technical papers to be presented and the contacts and discussions to take place would justify the meeting and establish the work of the industry throughout the world.

Altogether, six technical papers were presented during the meeting's morning and afternoon sessions. In addition, four complete papers were read at the roundtable discussion on propellants, which was led by Emil Hirschburger of Aerosol Service Co., Basel, Switzerland. All of the papers were of high technical merit and are expected to be of great interest to chemists and technicians generally throughout the industry.

Dr. P. H. Witjens of the Dutch firm of Polak & Schwarz spoke on some of the "Chemical Problems Concerning the Perfuming of Aerosols." His research covered a series of tests with unperfumed cosmetic products and the usual mixtures of propellants Nos. 11 and 12 in tin plate containers under two different sets of conditions, one at 100°C. for seven hours and the other at 55°C. for 14 days, the latter being customary in aerosol stability tests. The purpose of the tests was to determine chemical changes which might affect perfuming agents.

Cans stored at the higher temperature showed marked odor changes, indicating the first stages of aerosol corrosion and decomposition. There was a marked lowering of the pH and the presence of acetaldehyde and acetaldehyde diethyl acetal was determined by gas chromatography analysis. This result is attributed to the ethyl alcohol being dehydrogenated to acetaldehyde under the influence of HCl, and the acetaldehyde being in turn partially converted into the corresponding diacetal. Atmospheric oxygen is considered as the primary hydrogen acceptor.

### *Mayer Elected President of New European Federation*

Gerald M. Mayer, of Precision Valve International, was elected president of the new federation at its organizational meeting on Sat., June 27. Francois Harlan of France and Wilhelm Staehle of Germany were elected vice-presidents. Headquarters was established at Weisenhaur Strasse 2, Zurich 1, Switzerland. The next meeting of the federation will be held in Germany.

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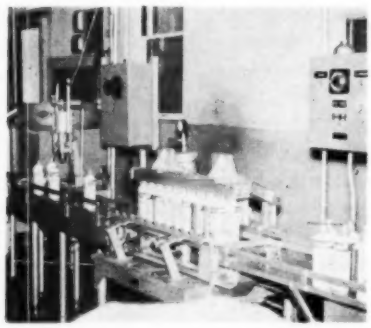
*Right* →



***Fully automatic pressure packaging line of Press-N-Serve Foods, Inc., St. Louis, showing Pres-Pak valves being inserted during line operation. Equipment was furnished and installed by Lemay Machine Co., St. Louis. Press-N-Serve reports that the Pres-Pak valve was chosen after its many superior features were revealed by a study of other valves.***

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Some of the exhibits at the Paris meeting include those of DuPont (right), Precision Valve (left background), and *Aerosol Age* (foreground).

When such products are perfumed, it is found that a number of other condensations, esterifications, re-esterifications and acetalisation reactions took place, radically altering the character of the perfume composition. All of these changes occur before corrosion actually begins. It was concluded that with cosmetic products where propellant 11 is used, any products which can act as hydrogen acceptors must be excluded as much as possible, and with pressure filling air evacuation should be practiced.

Speaking on "Application of Aerosols in the Pharmaceutical Industry," J. H. Briston of London, England, gave an interesting account of present products and future possibilities, citing the numerous products now on the market and some to come. He enumerated 14 specific advantages of the aerosol spray package for all kinds of applications, surface, inhalant, etc., remarking that with many inhalants the effectiveness of the remedy is quicker than with intravenous injection. After pointing out that pharmaceutical aerosol sprays are still in their infancy, he mentioned some of the major problems to be solved, i.e. sedimentation, solubility, dosages, sterilization, etc., none of which give any appearance of insurmountability. Particularly important is the matter of sterile filling techniques and corrosion-free containers and valves. He mentioned a burn spray remedy in use in England in connection with which, after each use, the spray nozzle is removed and sterilized in ether.

Mr. Briston termed very important the possibilities of oil-in-water and water-in-oil suspensions for all kinds of emulsions and foams, substituting for the present creams and pastes. He also cited the many possibilities, still relatively unexplored, in the veterinary field. In conclusion, he urged close cooperation between the pharmaceutical chemists and the aerosol technicians in valve and container fields.

It was later pointed out by Mr. Lessenich in his discussion on propellants that most European countries follow the same practice as does the US Food and Drug Administration in approvals of aerosol pharmaceuticals. Each remedy is clinically tested and approved by qualified medical practitioners before being publicly released. There is no general approval of any propellant or propellant mixtures for pharmaceutical purposes, the entire practice being based on each specific remedy.

The method employed by Lucien Pette to determine spray particle size, as described in his paper "Method of Determination of the Granulometric Characteristics of Aerosol Sprays," differs radically from that recommended by the USDA and used by CSMA in reporting results it reported in its proceedings for December 1956. Interestingly, enough however, both tests produced the same general results, though Mr. Pette claims his method to be more accurate for particle sizes of under five microns. His objections to the American method (which employs a revolving disk onto which the particles are sprayed and which is known as an "impactor" device,) are that the disk does not catch particles of different sizes with any regularity, and particles under five microns are not gathered at all.

The method he described was originally suggested by Burdette of New Jersey Agricultural Experimental Station, Bulletin 642 (1938). It consists of spraying into a large 55-gallon drum, from which top and bottom have been removed and in which is placed a small pan, the bottom of which is covered with a 1% solution of filtered soap water. After the spray, under closely controlled conditions, the pan is removed and the particles on the surface of the solution are examined and counted under a microscope. Most tests are conducted with 200 particles counted, but as many as 1,000 can be used. The results are then calculated according to accepted formulae covering known laws of repeated possibilities and conclusions on both particle size and volume are obtained.

Interestingly, Mr. Pette found that more than 50% of the particles fell in a range of from 1 to 5 microns which, however, accounted for less than 1% of the volume or weight. According to established standards as to what constitutes an aerosol, particle sizes must not be less than 0.5 or more than 50 microns. By volume or weight, according to his results, over 30% of the particles—the greatest number in any range—fell in the range of from 20 to 30 microns, results which coincide with the CSMA findings. Evidence of the finer particle sizes and this method of determining them could, it is believed, be of considerable importance with aerosol inhalant pharmaceuticals. According to Mr. Etienne of the Institut Philotechniquede Bru-

*(Continued on Page 69)*

Francoise Harlan speaks while Claude Franck, president of the French Association; Yrjo Talvitie, head of the Finnish Association; Gerald Mayer, president of the FEA and the IAA; and Wilhelm Staehle, head of the IGA, listen.

# The Use of Chlorothene for AEROSOL INSECTICIDES

*By Arthur E. Schober*

Solvents Sales
The Dow Chemical Co.
Midland, Michigan

IN 1958, just 15 years after their inception, approximately 40 million aerosol space insecticides were purchased. Refinements in containers, valves, and active ingredients and packaging techniques have put this convenient, effective means of insecticide control within the reach of most pocketbooks.

Manufacturers of insecticides are naturally interested in further reducing formulating and sales costs, without lowering product quality. The propellant system, which may comprise as much as 85 per cent by weight of an aerosol insecticide, is the logical portion in which to seek a cost reduction. Propellant 12 is most often used to provide the expelling force and, therefore, the vapor pressure depressant is the point of this discussion.

Chlorothene* has the ability to depress the vapor pressure of propellant 12. A 50:50 composition of Chlorothene and propellant 12 exerts a pressure of 36 psig at 70°F. Using Chlorothene as the vapor pressure depressant, either solely or in mixtures with propellant 11, reduces the cost per unit substantially (up to 2½c per 12-ounce unit). However, while it is desirable to reduce cost and increase profits, factors other than dollar savings must be considered in the choice of a vapor pressure depressant. Such factors include: performance, valve leakage, can corrosion, phytotoxicity, and solvency for active ingredients. The low vapor toxicity of Chlorothene has already been established.[1]

*Chlorothene is the registered trademark of The Dow Chemical Co. for its inhibited 1,1,1,-trichloroethane.

(1) *Aerosol Age*, June 1958, pg. 20.
(2) *Soap & Chemical Specialties Blue Book*—1955, pg. 259.

## Performance

Chlorothene has a boiling range of 160-190°F., as compared to a boiling point of 74°F. for propellant 11. The question has been raised as to whether this difference in boiling temperature and vapor pressure will increase the particle size of an aerosol insecticide containing Chlorothene and thereby reduce its effectiveness. To evaluate this possibility, Peet-Grady tests[2] were performed by an independent testing laboratory on formulations containing varying amounts of Chlorothene. The insecticide concentrate used in the Official Test Aerosol (OTA) was used in all formulations evaluated, with only the propellant system being varied. The aerosols compared contained 15 per cent OTA concentrate and 85 per cent propellant and were packaged in 12-ounce containers with a total fill of 300 grams. Buna gasketed valves with a .020 inch straight taper orifice in the actuator button were used on all test formulations. The five propellant systems compared were:

1. 50% propellant 11, 50% propellant 12
2. 50% Chlorothene, 50% propellant 12
3. 40% Chlorothene, 50% propellant 12, 10% propellant 11
4. 30% Chlorothene, 50% propellant 12, 20% propellant 11
5. 20% Chlorothene, 50% propellant 12, 30% propellant 11

The results for these Peet-Grady tests are reported below. Two Official Test Aerosol series were conducted in conjunction with the tests. This is required as no more than three samples may be compared

**Peet-Grady Test Results**

| *Propellant System* | *Dosage G./1000 cu. ft.* | *Aerosol 5 min.* | *Test 10 min.* | *Knockdown 15 min.* | *Aerosol Test KD Mortality* | *Aerosol Test Mortality* |
|---|---|---|---|---|---|---|
| | | % | % | % | % | % |
| OTA (A) | 3.00 | 22 | 35 | 50 | 50 | 81 |
| No. 1 | 3.10 | 22 | 38 | 57 | 56 | 8[illegible] |
| No. 2 | 3.19 | 19 | 32 | 46 | 46 | 76 |
| No. 3 | 3.05 | 21 | 35 | 50 | 50 | 7[illegible] |
| OTA (B) | 2.05 | 22 | 36 | 48 | 48 | 7[illegible] |
| No. 4 | 3.14 | 24 | 39 | 55 | 51 | 77 |
| No. 5 | 3.14 | 24 | 35 | 58 | 58 | 8[illegible] |

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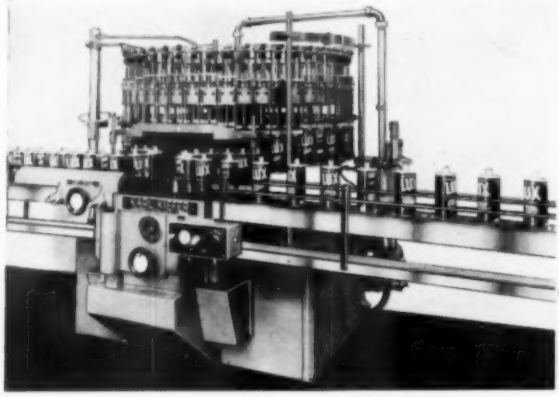

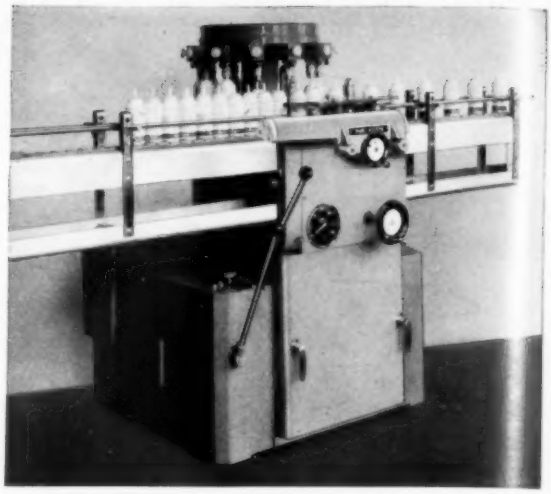

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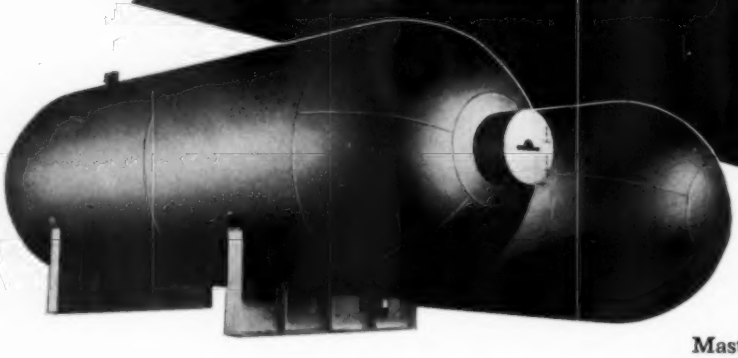

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with an OTA. The results obtained in the above table for sample numbers 1,2, and 3 are to be compared with Official Test Aerosol (A) and sample numbers 4 and 5 with OTA (B). The OTA differences (OTA performances minus sample performance for 5, 10, and 15 minute knockdown and a 24-hour mortality period) are as follows:

| | *Knockdown* | | | |
|---|---|---|---|---|
| *Sample No.* | *5 min.* | *10 min.* | *15 min.* | *Mortality 24 hours* |
| | % | % | % | % |
| 1 | 0 | +3 | + 7 | +1 |
| 2 | —3 | —3 | — 4 | —5 |
| 3 | —1 | 0 | 0 | —3 |
| 4 | +2 | +3 | + 7 | —1 |
| 5 | +2 | —1 | +10 | +4 |

Under the conditions of the tests, a sample is considered equal in performance to the Official Test Aerosol if its performance does not fall below a —5 percentage point difference from that of the OTA at the three knockdown intervals and at the 24 hour mortality period. These data demonstrate that the use of Chlorothene as a partial and complete replacement of propellant 11 has not significantly affected the biological performance of the formulations in comparison to the OTA. It is interesting that there is a difference of 3 percentage points in aerosol test mortality between the two Official Test Aerosols used in these tests, but it will be noted that OTA "B" delivered one-third less insecticide than did OTA "A."

## Valve Leakage

Another factor to be considered is the effect of Chlorothene on container weight loss due to valve leakage. The aerosol industry is particularly cognizant of container weight loss, as any substantial weight loss will prevent the container from conforming to the weight specified on the label (as well as possibly impairing the function of the valve).

Data show the weight losses experienced on propellant systems of 50:50 Chlorothene and propellant 12 by weight to be comparable to those experienced with propellant 11 and 12 systems.

Through these storage tests, it was found that aerosols having valves with buna gaskets lose less weight due to valve leakage than do those containers equipped with valves having Neoprene gaskets. Containers stored in "dead" condition were weighed

**TABLE I**

SIX MONTH VALVE LEAKAGE LOSSES ON COMMERCIALLY AVAILABLE AEROSOL VALVES

50:50 Chlorothene and Propellant 12 — 350g Fill in 12-ounce cans

| *Storage Condition* | | *Valve A* grams | *Valve B* grams | *Valve C* grams | *Valve D* grams |
|---|---|---|---|---|---|
| *70°F* | | | | | |
| | 1 | 0.2 | 0.2 | 0.4 | 0.5 |
| Valve | 2 | 0.2 | 0.2 | 0.2 | 0.5 |
| Up, | 3 | 0.2 | 0.2 | 0.3 | 0.6 |
| Dead | 4 | 0.3 | 0.2 | 0.3 | 0.8 |
| | 5 | 0.3 | 0.3 | 0.4 | 0.5 |
| Valve | 6 | 0.3 | 0.2 | 0.2 | 0.6 |
| Down, | 7 | 0.3 | 0.3 | 0.2 | 1.6 |
| Dead | 8 | 0.2 | 0.2 | 0.3 | 1.3 |
| | 9 | 0.3 | 0.7 | 1.6 | 0.5 |
| Valve | 10 | 0.4 | 0.3 | 0.2* | 1.0 |
| Up, | 11 | 0.2 | 1.2 | 0.2 | 0.6 |
| Live | 12 | 0.2 | 0.2 | 0.3 | 0.9 |
| | 13 | 0.2 | 0.3 | 0.3 | 0.8 |
| Valve | 14 | 0.3 | 0.3 | 0.3 | 1.2 |
| Down, | 15 | 0.3 | 0.4 | 0.2 | 2.0 |
| Live | 16 | 0.2 | 0.3 | 0.3 | 1.9 |
| *120°F* | | | | | |
| | 1 | 0.7 | 0.6 | 0.8 | 1.4 |
| Valve | 2 | 0.6 | 0.8 | 0.8 | 2.6 |
| Up, | 3 | 0.9 | 1.4 | 1.1 | 1.4 |
| Dead | 4 | 0.8 | 0.7 | 0.9 | 1.3 |
| | 5 | 0.7 | 0.7 | 0.7 | 1.5 |
| Valve | 6 | 0.8 | 0.7 | 1.0 | 1.6 |
| Down, | 7 | 0.8 | 0.6 | 0.9 | 3.0 |
| Dead | 8 | 1.1 | 0.8 | 0.5 | 1.6 |
| | 9 | 0.5* | 0.7 | 0.6 | 2.6 |
| Valve | 10 | 0.7 | 1.0 | 0.7 | 1.6 |
| Up | 11 | 0.7 | 1.1 | 0.9 | 1.9 |
| Live | 12 | 0.7 | 0.8 | 0.9 | 4.0 |
| | 13 | 1.0 | 1.3 | 1.3 | 3.2 |
| Valve | 14 | 0.4* | 0.7 | 0.8 | 3.5 |
| Down, | 15 | 0.8 | 0.4* | 1.2 | 0.8* |
| Live | 16 | 0.4 | 0.8 | 1.3 | 2.8 |

* Four months storage

monthly, but the valves were not actuated. Containers in "live" storage were weighed monthly and 10 second spray rates determined monthly. The results which are the sums of the weight losses for a six month period, are shown in Table I.

### Can Corrosion

Chlorothene "as received" contains less than 100 ppm moisture and compares with propellant 11 and methylene chloride in hygroscopicity. However, minute quantities of water often are introduced in aerosol systems either with the active ingredients or during the filling operation. It need not be mentioned here why can corrosion is highly undesirable and is an important consideration in choosing a vapor pressure depressant.

Can corrosion tests were performed on several popular types of aerosol cans. These cans varied in amount of tin plate or type of lacquer lined interior. Storage temperatures of 70°F. and 120°F. were chosen, the latter to accelerate conditions which occurred at 70°F. Each vapor pressure depressant was tested with various concentrations of moisture. Complete insecticide formulations were not used due to the variance between active ingredient compositions. Moisture levels compared were, 86 ppm, 300 ppm, and 580 ppm. At saturation Chlorothene contains approximately 600 ppm water and propellant 11 around 100 ppm at 80°F.

In the can corrosion tests the vapor pressure depressants were saturated at 70°F. and excess moisture added where necessary. They were then cold filled in the containers at —20°F. It is possible that at this lower temperature a separate water phase is formed which does not readily redissolve when the mixture returns to room temperature. Assuming this to be the case, hydrolysis of the solvent in the excess water phase is mainly responsible for the corrosion experienced. That hydrolysis takes place predominantly in the aqueous phase has been revealed in glassware tests.

Results of these tests demonstrate that no corrosion was experienced with either Chlorothene or propellant 11, unless these solvents were saturated with moisture and there was the possibility of an excess moisture phase existing. When corrosion was experienced with either propellant 11 or Chlorothene, it occurred at the solvent-vapor interface or in the vapor space.

### Phytotoxicity

Aerosol insecticides containing Chlorothene as the sole vapor pressure depressant were evaluated as to their effect on plants when sprayed directly. Spraying was accomplished from a distance of 18 inches and under most cases no effect was observed. However, it was found that where the spray came in contact with flowers (particularly those colored red) of certain plants, slight discoloration of these flowers was noticed. The plants whose blooms were affected continued to produce unaffected blooms and it is felt the discoloration was due to the chilling effect of the spray.

### Solvency and Active Ingredients

Chlorothene is an excellent solvent for most active ingredients and synergistic materials used in aerosol insecticides. While it does not possess the

(*Continued on Page* 72)

TABLE II

*Aerosol Can Corrosion Tests at 70°F.*
(1.0 pound hot tin plate body and 1.25 hot tin coated bottom)

| *Can No.* | *Propellant System* | *Moisture Present* | *Months Storage* | *Liquid Analysis Chloride ppm* | *Acids ppm* | *Internal Condition of Can After Test* |
|---|---|---|---|---|---|---|
| 1 | 50:50 Chlorothene and Propellant 12 | 300 ppm | 6 | 0 | 1 | Excellent |
| 2 | | 300 ppm | 6 | 0 | 1 | Excellent |
| 3 | | 300 ppm | 12 | 0 | 0 | Excellent |
| 4 | | 300 ppm | 12 | 0 | 0 | Excellent |
| 5 | 50:50 Chlorothene and Propellant 12 | 580 ppm | 6 | 0 | 1 | Corrosion in vapor phase, Pitting maximum 2 mils* |
| 6 | | 580 ppm | 6 | 0 | 1 | Pitting maximum at 2 mils |
| 7 | | 580 ppm | 12 | 0 | 1 | Pitting maximum at 1 mil |
| 8 | | 580 ppm | 12 | 0 | 2 | Pitting maximum at 2 mils |
| 9 | 50:50 Propellant 11 & Propellant 12 | 86 ppm | 6 | 0 | 0 | Excellent |
| 10 | | 86 ppm | 6 | 0 | 0 | Excellent |
| 11 | | 86 ppm | 12 | 0 | 0 | Excellent |
| 12 | | 86 ppm | 12 | 0 | 0 | Excellent |
| 13 | 50:50 Propellant 11 & Propellant 12 | 300 ppm | 2 | 0 | 0 | Corrosion at interface with pitting maximum at 2 mils* |
| 14 | | 300 ppm | 2 | 0 | 0 | at 2 mils* 1 mil |
| 15 | | 300 ppm | 2 | 0 | 0 | at 2 mils* 2 mils |
| 16 | | 300 ppm | 2 | 0 | 0 | at 2 mils* 2 mils |

*Can wall 13 mils thick.

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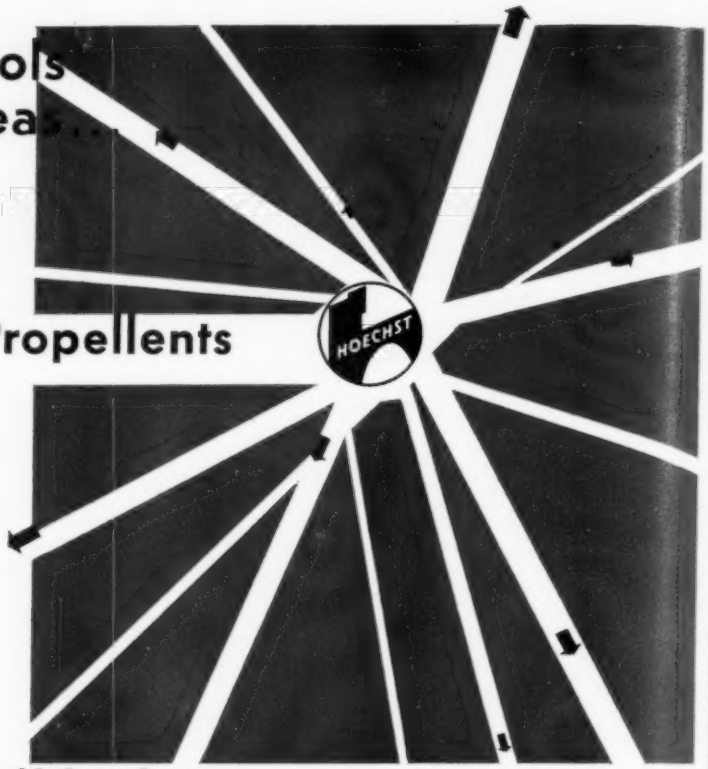


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Frigen 22 A Difluoromonochloroethane $CHF_2Cl$

Frigen 113 A 1,2,2,-Trifluorotrichloroethane $CFCl_2$-$CF_2Cl$

Frigen 114 A 1,1,2,2,-Tetrafluorodichloroethane $CF_2Cl$-$CF_2Cl$

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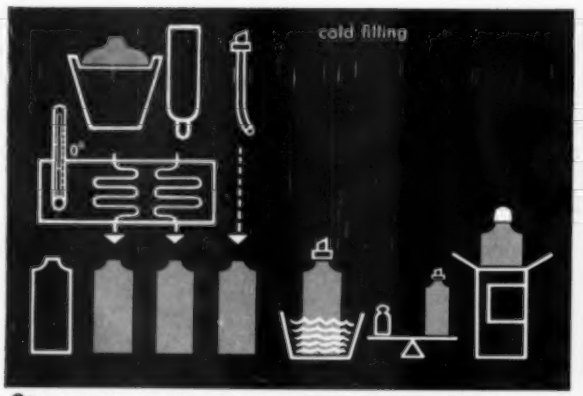


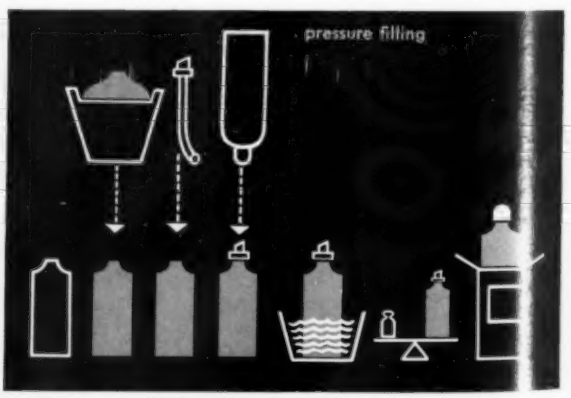


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**In this column important aerosol subjects appearing in other periodicals (both domestic and foreign) will be reviewed and summarized. It is felt that this service will enable the reader to keep abreast of most of the significant contemporary articles on the industry, even though they may appear in other periodicals. Since there is a chance that some pertinent articles may be overlooked, it will be helpful if readers will call our attention to any they judge important enough to review.—*The Editor.***

# AEROSOLS in review

## *Food Additives Law Discussed by Head of FDA*

A DETAILED analysis of how the new Food Additives Law affects the future of long-established packaging materials (many of which are used in the aerosol industry), is the subject of two highly informative articles in the July *Modern Packaging*. The first of the articles is a question-and-answer type interview with John L. Harvey, deputy commissioner of the Food and Drug Administration.

In an analysis of the interview, the article points out: "The answers reveal for the first time how much authority the FDA has in both judging the qualifications of technical experts and deciding whether or not a chemical is really a food additive. Should the FDA take a narrow viewpoint on these two subjects, few packagers would be qualified to express an opinion on the safety of their packages that would carry any weight with this regulatory agency and the FDA could so broaden the definition of a food additive that needed clearances on long-established materials could be hopelessly entangled in the red tape of official petitions. If however, the FDA will listen to considered opinions of recognized packaging experts—as opposed to authorities in toxicology and pharmacology only—clearances on important packaging materials could conceivably proceed at a rapid rate.

". . . If a packager wants to be safe he must perform tests if there is any reason to suspect migration in his package. And while the FDA is working on some tests that may eventually shorten animal-feeding experiments, they will not be ready in time to help packagers through the present test period. Furthermore, severe as they are, the FDA is quite satisfied with the chemical tests it now recommends."

The following is an excerpt of some of Commissioner Harvey's answers:

Q: *What is the distinction between a food additive and a food ingredient?*

A: A food additive is a substance that is specifically defined in the Amendment—in short, it is any substance that directly or indirectly gets into food and is not generally regarded as safe. A food ingredient is any component of a food.

Q: *How many materials have been cleared by prior sanctions?*

A: There are several hundred materials that have been cleared by prior sanction. Most clearances are based on facts that show there is no migration.

Q: *Have any packaging materials been cleared for use on foods since the law went into effect?*

A: We have told people that, based on data they furnished us regarding a product, we did not believe it to be subject to the Food Additives Amendment. There have been no formal petitions approved on packaging materials.

Q: *What does FDA intend to do after March, 1960, or March, 1961* (the initial and extended time limits for completion of clearances), *about long-standing packaging practices or packaging materials that are recognized as safe in the packaging field—but which have not been officially cleared by FDA?*

A: Recognition in the packaging field is not the criterion that is expressed in the law. To be exempt, the substances must be generally recognized as safe by experts who are qualified by training and experience to evaluate the safety of food additives. If they are not exempt, they would then be illegal unless they had a formal clearance.

Q: *Where experts, as defined in the regulation, have determined through scientific procedures that a packaging material is safe, must their opinion be confirmed by FDA?*

A: They may decide for themselves whether they wish to secure an opinion from the FDA as to the status of a substance under the Amendment. We think it important to bear in mind that in order to qualify for an exemption, the recognition of safety of a substance must be general among experts and not limited to a few who are privileged to review facts not generally available to all. Where there is no general recognition of safety, then the matter must be presented by way of a petition to the FDA.

Q: *How can packagers protect themselves from unintentional violations of the Food Additives Law without going to the trouble and expense of chemical tests for migratory compounds?*

A: If there is any reason to believe that substances which are unsafe may become a component of food from packages, the facts must be resolved—and they cannot be resolved without testing. (Editor's note: However, many packagers are demanding guarantees of safety from their packaging suppliers.)

Q: *Is FDA satisfied with its current recommended tests for extraction of packaging materials, or is work being done to modify or discard these tests in favor of less rigorous extraction procedures?*

A: We have no plans to change present methods.

Q: *Is FDA working on any methods to short cut the long-term animal-feeding tests by using faster biochemical techniques?*

A: Yes, we are studying biochemical techniques for determining the safety of food additives and are doing some research work in our own labora-

tories. While we do not have any immediate prospects that these will shorten the present long-term studies, we certainly hope they will.

Q: *Would the presence of a chemical in a packaging material that is normally found in a food be acceptable to FDA?*
A: Only if it is generally recognized as safe. As a matter of fact, all components of food are chemical.

Q: *What is FDA's general thinking on the plasticizers and stabilizers now used in plastic packaging materials?*
A: Plasticizers and stabilizers generally migrate. Therefore, tests must be performed to find out what migrates and how much.

Q: *Has polypropylene been cleared for use on food products?*
A: No. We need to see adequate extraction data before this material can be cleared.

Q: *Why has the agency withheld approval for use of polyethylene on fatty foods?*
A: The withholding of approval on polyethylene for fatty foods arises from the fact that lower-molecular-weight polymers in polyethylene tend to migrate to fat. We can clear this material only when its safety is definitely established.

•

THE SECOND *Modern Packaging* article, based on a book recently issued by the National Research Council, deals with the principles and methods that should govern procedures to establish the safety of packaging materials under the Food Additives Amendment. The three things to be discovered in any such tests, the article suggests, are: (1) whether or not any of the container components are leached into the contacted food; (2) the amount of container extractables in the food, and (3) the materials that are extracted.

"Ideally, the extraction phase of the appraisal tests should consist of processing and storing the food or foods in the container for the maximum period and temperature likely to be encountered in practice. As an experimental approach, this is often not practical for several reasons; *viz.* the impossibility of anticipating all possible foods for which a given packaging material may be used, the inordinately long time required to complete such a test and the interefernces encountered in applying analytical procedures to such complex materials as foods. To obviate these difficulties it is acceptable to conduct extraction tests under accelerated conditions employing simple, food-simulating solvent systems.

". . . Generally, extraction procedures should:

"1. Provide an exaggeration of time and/or temperature over commercial conditions of packaging, processing, distribution, storage, and use. Time might be exaggerated if the food to be packed has a short shelf life; but it is more common to elevate the temperature for accelerated effects since most foods of concern have a long shelf life. The degree of acceleration cannot be stated *a priori*, but must be determined for the particular type of material under investigation. The possibility of physical or chemical changes not typical of those occurring during processing or storage, but due to temperatures excessively above normal usage, must be considered.

"2. Provide a ratio of test surface to solvent volume equal to that of the industrial package, or a ratio that, if exaggerated, will not *per se* be the limiting factor in extractability. In practice, the requirements for analytical sensitivity dictate that the greatest possible surface area be extracted by the smallest volume of solvent, but care must be taken that a state of equilibrium, or saturation, is not reached or closely approximated. If this occurred, the extractability at a normal surface-to-volume ratio would be underestimated. It may be necessary to show that a proportionality exists between area exposed and amount or rate of material extracted.

"3. Permit definite identification of materials extracted. The extract must be examined not only for the major components, but also for impurities, raw materials, unreacted ingredients, plasticizers, etc.

"4. Permit quantitative estimation of extracted materials. Methods having high analytical sensitivity—for example, in the range of 0.1 ppm—may be required. When such methods are not available, the weight-loss method may sometimes be used, particularly if a material balance between weight loss of the resin or film and recoverable extract can be established. But this method is uncertain at best and definitely inaccurate in cases where film or coating being tested is not completely dissolved and may have absorbed some of the extractant.

"5. Give results sufficiently reproducible that a reasonable index of variability can be estimated. . . ."

The article points out that, though the ideal sample would be one from the production line, it may often be necessary to prepare special laboratory specimens. As an example of this it cites an interior can coating, which, when it is to be totally immersed in an extracting solution, must be coated both inside and outside.

"The use of solvent systems to simulate foods, in addition to facilitating analysis, obviates the testing of each individual food. The solvents chosen should reflect the aqueous or lipoidal character of the food and the sugar, salt, and acid content, with respect to both concentration and composition.

"Among the solvents that have been used for extraction tests with can enamels are: water, a 1% aqueous solution of sodium chloride mixed with 10% lard by weight and a 1% aqueous acid solution at pH 3.5 containing 10% sucrose by weight. . . ."

The article concludes with a detailed discussion of analytical procedures and interpretation of data.

•

PAINT SPRAY and other aerosol marketers, would do well to study the recent work done by the USDA's Pesticide Chemicals Research Laboratory, suggests the July issue of *Industrial and Engineering Chemistry*. The work was described by A. H. Yeomans and R. A. Fulton in the July issue of *Aerosol Age* (pages 22-23). The *I & E C* article declares that the USDA work might prove important in studying the splash phenomenon of aerosol paints; that is, how much of the pigment sticks to the surface being painted, and how much bounces off. "Studies of the re-

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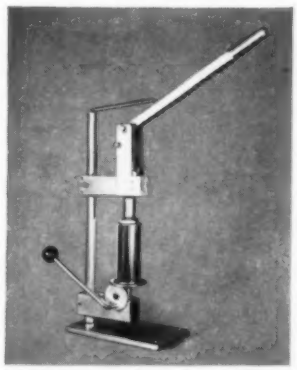

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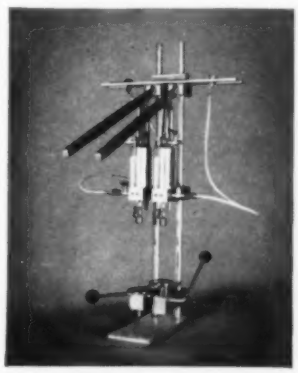

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locities of the particles coming from the hair spray aerosol (over 3,000 miles per hour!) and particle size will be useful in developing formulations which will give the consumer more spray product for his money."

Turning to the actual experiment, the article says: "When the precipitated particles collected by the sampler were analyzed, it was found that when the spray was directed at the user's hair, there was a momentary 'splashing' effect and the girl breathed mostly PVP. But when she missed her head, she breathed PVP plus alcohol, the PVP solvent. More important, however, the amount of PVP collected from the air immediately after spraying was so small that the Food and Drug Administration ruled that it could not possibly be a factor in producing cancer."

•

THE "PANIC-BUTTON" approach to research, particularly in aerosol product development, is deplored in an article by Robert L. Goldemberg in the June issue of *Drug & Cosmetic Industry*. He declares: "Every management will admit that this approach is foolish and costly in time and effort. None is completely immune to it, no matter what pious platitudes are woven into their standard pep talk to newly hired chemists or visitors being shown through the 'long range research' labs. Crash priority project switching results in laboratory personnel who are in a constant frenzy of activity and are forced to write reams of 'progress' reports because they never get to finish any one project to anyone's satisfaction."

Mr. Goldemberg prefaces his argument with the case of an executive who comes into the laboratory and says: "Jones, we have very reliable information that Gigantic Toiletries is coming out with an aerosol bubble bath which you squirt under water to get a tub full of bubbles. No more worrying about the water pressure and temperature in Oshkosh. You'd better drop what you're doing and do a quick job on this one."

According to the author, there then ensues a wild goose chase in which it is eventually resolved that the only practical solution is a nitrogen package which can be used to package the standard formulation. As it turns out, this solves the problem of the water pressure and temperature in Oshkosh not at all. Before this is resolved, however, one of the research chemists is wasting valuable time trying to pack enough non-corrosive bubbles into one can to fill 6-8 bathtubs full of soapy hard water. "He has tied up half the aerosol laboratory's facilities for a couple of weeks, lost a few more friends for the consumer research department, and temporarily dropped a very promising research project in order to get this 'simple' request out of the way. By the time he gets back to his promising project, it has grown cold in his notebook and he can't remember why he did those last few experiments."

The article also criticizes the "blue sky approach" (in which the president of the company simply asks for "something new") and the "bandwagon" (in which the company depends on a few "experienced hacks who have been in and out of every lab in the industry and know all the standard formulations"). The article advises that executives should rather depend on "agile formulators backed up by superb analytical facilities, on a very agile advertising agency, on buying the right man at the right time, and on knowing when to zig and when to zag."

*"We don't care whether it works or not, it sure spices up the office!"*

•

REFILLABLE aerosol containers may have the same impact at cosmetic counters that refillable lipstick cases have had. This is the opinion of Donald S. Tuttle, Jr., sales manager of the Aerosol Division of Risdon Manufacturing Co., in an article in the June issue of *Beauty Fashion*. The article attributes the popularity growth of such containers to the following factors:

"1. Women are becoming more aware that good grooming requires fragrances to be 'retouched' as frequently as makeup. The new purse aerosols make it easy and practical to have fragrance in hand when the user is away from home.

"2. The refillable containers are exquisitely styled and designed to add beauty to any purse or dress-

(*Continued on Page* 78)

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# Equipment Leasing for the aerosol industry

*a question-and-answer discussion of the current and potential situations*

**By Robert Sheridan, president**
Nationwide Leasing Co.
Chicago 3, Illinois

1. *What is the volume of equipment leasing by aerosol packagers?*

At the end of 1958 there was approximately $2.3 million worth of production equipment on long-term lease to the pressurized packaging industry. The chemical industry as a whole had $18 million worth of equipment on lease at the end of 1958, a gain of 150% in one year. All types of equipment are included in this volume, including certain office machines.

Major reasons for the growth of leasing in this industry are: (1) the steady growth of the industry, which has strained its working capital resources, (2) the rapid rate of technological obsolescence of equipment, which is not reflected in government depreciation schedules, (3) the high cost of new equipment, and (4) the high rate of profit earned by the industry on liquid working capital (an average of 46% before taxes) provides strong impetus to keep cash working in the business, rather than frozen in equipment.

2. *What is the volume of equipment leasing by U.S. industry?*

At the end of 1958 there was approximately $227 million worth of production equipment on long-term lease throughout U.S. industry.

3. *What is equipment leasing?*

Equipment leasing is a method of obtaining the use of income-producing equipment (fixed assets) without capital investment. When equipment is obtained in this way for use in production, the units remain the property of the leasing company, but are used by the lessee, who pays the leasing company a fixed charge for a stated period for using the equipment. Leasing is a long-term arrangement, normally from three to 10 years, though in some cases it may be as little as two years or as long as 15 years. It is different from equipment *rental* which is a short-term affair, in which the rental firm rents out new or used pieces for a brief period, reclaims them at the end of the period, and then rents the equipment to other users.

4. *How does equipment leasing work?*

A company which wishes to lease equipment from Nationwide Leasing Co., for example, submits an application describing itself—its business, its financial position, etc. It lists the specific manufacturer from whom it wishes to secure the equipment, the price of the equipment, the length of the lease terms it desires, and the form of payment it desires. The leasing company then purchases the equipment and arranges for its shipment directly to the lessee's plant or store. Upon acceptance of the equipment, payments start. All equipment, no matter how many items are involved, can be covered by a single master lease and can be paid for in a single monthly payment. This is true regardless of how many suppliers are involved. This reduces the user's bookkeeping considerably.

5. *What types of equipment are leased?*

All types. In 1958, equipment leased ranged in cost from a $117 hand truck (part of a $140,000 equipment lease with a midwestern hospital) to $5,000,000 worth of construction equipment. Both standard and specially-built units can be leased.

6. *Why has equipment leasing increased so rapidly?*

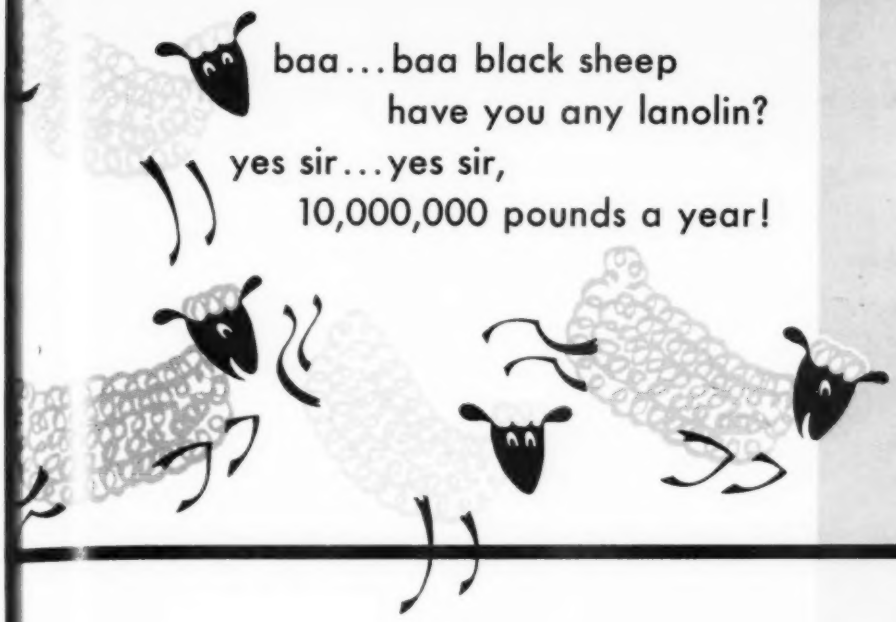
Basically, equipment leasing has increased as a result of the steadily increasing cost of capital equipment. Leasing has historically been a means of permitting businessmen to function without owning everything they need to do business, since profits are made by *using* capital equipment, rather than *owning* it. Specific reasons for the current growth of equipment leasing are:

1. Profit-producing equipment is put to work without capital investment. This is particularly important since working capital remains tight, despite the slight improvement resulting from inventory liquidation.
2. To increase profits without increasing a company's own capital investment.
3. To increase production without reducing liquidity of working capital.
4. To reduce the risk of loss caused by rapid obsolescence of specialized equipment.
5. To obtain equipment for limited term use, either for special orders or for development or research work. This is particularly important where firms are involved in defense contract work.
6. For manufacturers of industrial equipment, leasing programs have proved to be an effective method of increasing sales.

7. *What are the advantages of leasing?*

Other advantages to users of leased equipment, in addition to those listed

(*Continued on Page 75*)



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Croda provides the ultimate in quality . . . suitable for the most exacting purposes in cosmetics and pharmaceuticals.

**COSMETIC LANOLIN U.S.P.**

High quality lanolin with excellent blending properties. Moderately priced . . . for use in pharmaceuticals and cosmetics.

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★ London, England
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# NEWS of Pressure Packaging

## Details of Aerosol Technical Clinics Announced by CSMA

THE first educational technical clinic to be conducted for members of the fast growing aerosol industry will be sponsored by the Aerosol Division of the Chemical Specialties Manufacturers Association this coming October in two centers of aerosol filling activity, New York and Chicago.

According to E. J. McKernan, chairman of the CSMA Aerosol Division, the objective of the clinic is to provide basic and up-to-date technical information on pressure filling operations to industry members, especially junior level management, operators and technicians. The program is expected to also be of interest to companies considering entering the aerosol field, either as fillers or marketers, and to students at colleges and universities offering aerosol courses.

Each clinic will be a one day affair, running from 9 to 5 p.m., and will cover such subjects as history and growth of the aerosol industry, aerosol principles, propellants, containers, valves, laboratory equipment and techniques, formulation problems and commercial filling methods and problems. Each subject will be discussed by one or more technical experts in the industry.

According to Mr. McKernan, several key speakers have already been scheduled.

Dr. Frank Mina of Lodes Aerosol Associates will discuss aerosol principles. Lloyd Flanner, head of the "Genetron" aerosol technical service laboratory of Allied Chemical's General Chemical Division will review propellants. Dr. Walter Beard, research director of the Valve Division of Risdon Manufacturing Co., will speak on valves. Dr. John Buchanan, chief of the aerosol development section, Continental Can Co., will discuss aerosol containers.

According to Mr. McKernan, the subjects of formulation problems and commercial filling methods and problems will be discussed by panels of experts from the technical staffs of contract fillers and marketer fillers in the East and Midwest, Their names and those of other speakers will be announced in the near future.

The New York program is scheduled for Saturday, Oct. 17th, at Hotel McAlpin. The Chicago program will be the following Saturday, Oct. 24th, at a location yet to be chosen.

"We of the CSMA Aerosol Division are most enthusiastic about these clinics," Mr. McKernan said. "Ours is one of the fastest growing industries in America and there has been a growing need for such educational sessions to help train the younger members of the industry who will be principals of tomorrow. We believe that the Aerosol Division will be rendering a major service through the clinics and hope that the first two will be the forerunners of a continued program over the years."

The clinics are being arranged by the CSMA Aerosol Division Program Committee of which J. J. Tomlinson, General Chemical Division, Allied Chemical Corp. is chairman.

A special sub-committee headed by A. H. Lawrence of E. I. duPont de Nemours is responsible for scheduling speakers and working out all details for both affairs.

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### Fluid Names Marzane, Keenan

Fluid Chemical Co., Newark, N.J. custom filler, has announced the appointment of Richard D. Marzane as sales manager. Succeeding him as company director of purchases is Stuart Keenan.

Mr. Marzane (r) joined the company in 1957 as director of purchases and financial adviser to the company. Prior to that he had been vice-president of the Central Bank and Trust Co. of Miami, Fla. Mr. Keenan joined Fluid in March of this year after nine years with the Continental Can Co., during which he served in both the Chicago and New York offices.

•

### Aerosol Golf Meet Set

An Aerosol Industry Invitational Golf Tournament, sponsored by a number of leading aerosol suppliers, will be held on Tuesday, Aug. 11, at the Winged Foot Golf Club, Mamaroneck, N. Y., scene of the 1959 National Open earlier this year. The Tournament is an outgrowth of a smaller golf outing sponsored first by VCA in 1955, and by Precision Valve Corp., Continental Can Co., and Crown Cork & Seal Co. in successive years since then.

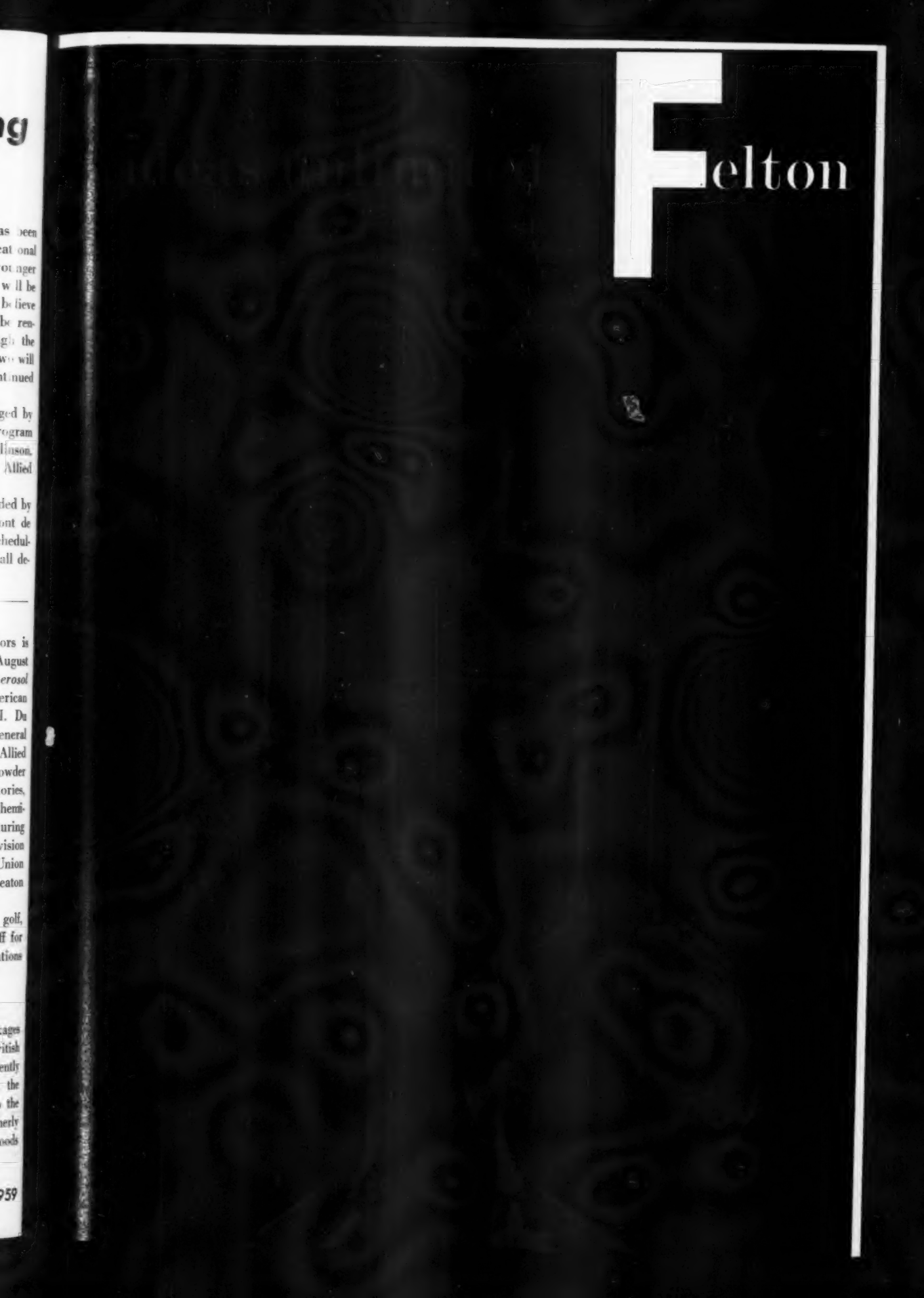
Each of the original sponsors is one of 18 co-sponsors for the August Tournament, the others being *Aerosol Age*, Aerosol Research Co., American Can Co., Clayton Corp., E. I. Du Pont de Nemours & Co., General Chemical Co. Division of Allied Chemical Corp., Hercules Powder Co., Oil Equipment Laboratories, Peerless Tube Co., Pennsalt Chemicals Corp., Risdon Manufacturing Co., the A. Schrader's Son Division of Scovill Manufacturing Co., Union Carbide Chemicals Co., and Wheaton Plastics Co.

The affair will include lunch, golf, cocktails and dinner, with tee-off for any time after 11 a.m. Invitations were mailed late last month.

•

### British Firm Names Monk

Proprietary Pressure Packages Ltd. of Birmingham, England, British aerosol product marketer, recently appointed Ronald S. Monk to the post of general manager and to the board of directors. He was formerly Midlands sales manager for Fitfoods Ltd.


Felton

## Risdon Names Four Execs to Aerosol Posts

THE Risdon Manufacturing Co. Naugatuck, Conn. has named two managing directors to head divisions of the company, and at the same time promoted two other executives to new positions.

Lawrence F. Heileman, manager of the firm's Danbury plants for the past three years, has been appointed man-

L. P. Heileman

aging director of the Cosmetic and Aerosol Divisions, with responsibility for sales and manufacturing activities.

Edward Noyack, factory manager of the Naugatuck plant, has been appointed managing director of the Naugatuck and Waterbury plants, responsible for their manufacturing and engineering operations.

Donald S. Tuttle, Jr., presently sales manager of the Aerosol Division, has been made sales manager of the Cosmetic Division as well.

Raymond W. Wolff, who for 11 years has served in several Risdon divisions as a sales and design engineer, was named product development manager of the Cosmetic and Aerosol Divisions.

Mr. Heileman, who has been with Risdon 24 years, joined the company in 1935, two years after his graduation from the U. S. Naval Academy at Annapolis. Before becoming factory manager of the Danbury plants, Mr. Heileman had also been factory superintendent there, ordnance engineer, assistant sales manager and member of the sales department. He has been a member of the board of directors for several years.

Mr. Noyack, a member of Risdon's board of directors, has been with the company since 1920 in various capacities, including factory manager, factory superintendent and assistant factory superintendent. Actively engaged in engineering as well as manufacturing, he has been awarded more than ten patents covering original developments in the metal fabrication field.

Mr. Tuttle joined Risdon in 1946 after World War II service as a Marine dive bomber pilot. He was appointed assistant to the sales manager of the firm's Wire Specialties Division in 1948. When the Valve Division, predecessor of Risdon's Aerosol Division, was formed in 1952, he became its sales manager.

Mr. Wolff has specialized in product development work in the cosmetic field. He holds several design patents.

Donald S. Tuttle, Jr.

Before joining Risdon in 1948, he was associated with Casco Products Corporation and The Bassick Co., both in Bridgeport. A U. S. Air Force flight instructor in World War II, he attended Newark School of Fine and Industrial Arts specializing in advertising arts and industrial design. A native of Pittsburgh, Pa., Mr. Wolff now lives at RFD #1, Bridgeport.

### CMCSA Moves Montreal Office

The Canadian Manufacturers of Chemical Specialties Association, trade association whose Aerosol Division includes most aerosol fillers, marketers, and suppliers in Canada, last month moved its office in Montreal. New address of the association is 3405 Cote des Neiges Road, Montreal 25, Que. Phone number is WE-53547.

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### SCC Announces 6th Seminar

The Society of Cosmetic Chemists will hold its sixth annual cosmetic seminar in New York on Sept. 23 and 24th. Both sessions of the seminar, which will be on the subject "Percutaneous Absorption", will be held at the French Institute, 22 East 60th Street, New York, and the social events at the New York Academy of Sciences, 2 East 63rd Street, New York.

The following is a general outline of the subject for each session:

*Morning Session—Sept. 23*
**"Methods for Measuring Percutaneous Absorption"**
**Chairman: Everett L. Saul, Ph.D.**
*Afternoon Session—Sept. 23*
**"Factors Which Influence Percutaneous Absorption"**
**Chairman: Irvin H. Blank, Ph.D**
*Morning Session—Sept. 24*
**"Desirable Effects Resulting from Percutaneous Absorption of Cosmetic Chemicals"**
**Chairman: Paul Lauffer, Ph.D**
*Afternoon Session—Sept. 24*
**"Possible Toxic Effects Resulting From Percutaneous Absorption of Cosmetic Chemicals"**
**Chairman: Raymond R. Suskind, Ph.D.**

•

### New British Custom Filler

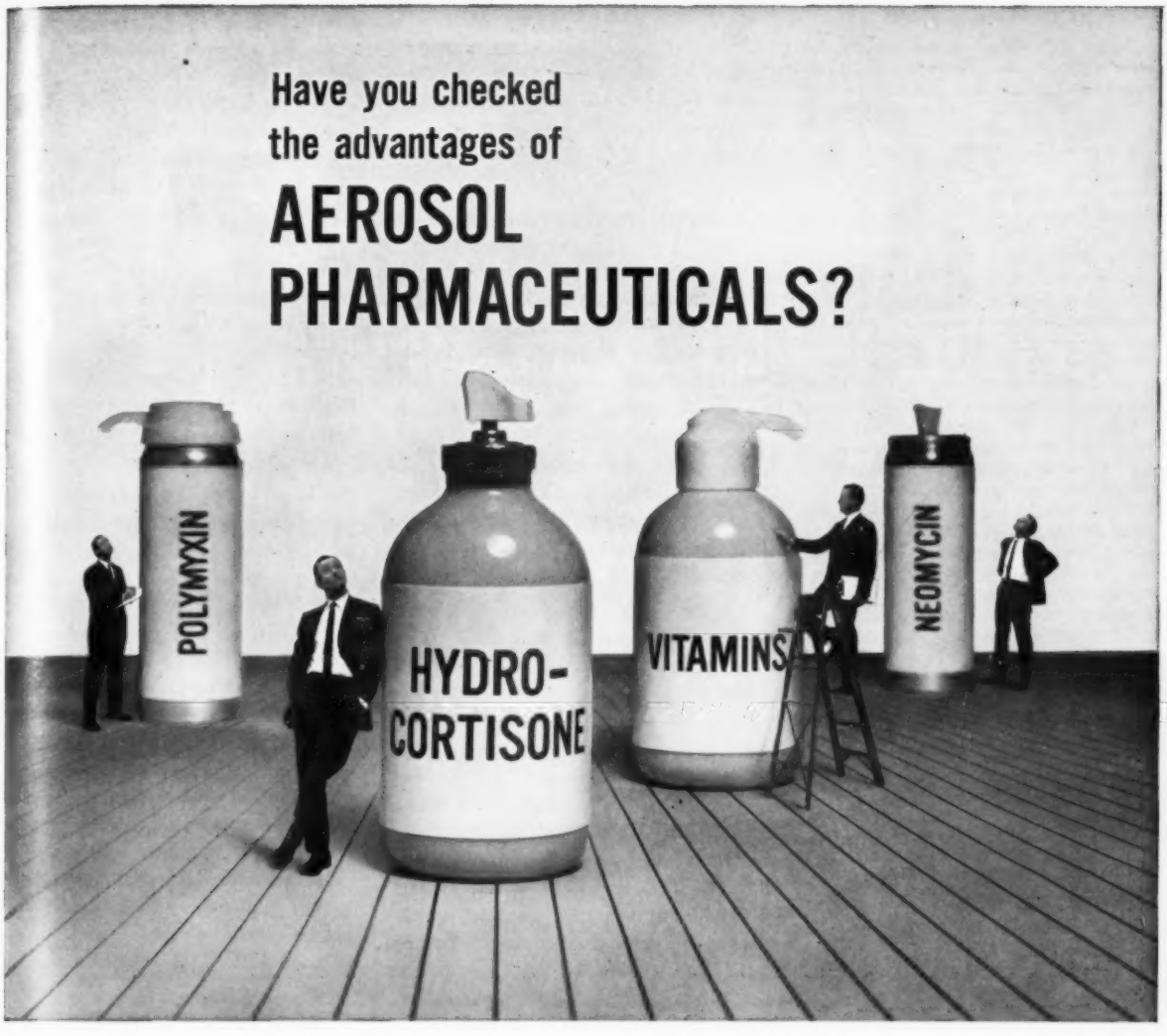
Bardro Aerosol Packaging Co., 191 Latimer Road, London, N.W. 10, England, has announced that it is willing to undertake short production runs for aerosol packaging to help in product research and development. The company, which currently markets its own product line, is equipped to package with a wide range of propellants by both cold and pressure filling.

•

### Henri Costerg Dies

Henri Costerg, vice-president and director of Dana, New York perfume and toilet goods marketer, died recently. He was responsible for Dana's export operations between the U. S. and various foreign Dana distributors. He was a director of the Fragrance Foundation and the Toilet Goods Association.

# Have you checked the advantages of AEROSOL PHARMACEUTICALS?




● The unique advantages of pressure packaging lend themselves to a number of pharmaceutical products and applications. For some time now Pfizer has been working in close cooperation with the pressure packaging industry to develop formulations where these advantages will be most profitable for pharmaceutical manufacturers.

For example, the stability of liquid multivitamins is greatly extended by pressure packaging because the preparations are overlayed by an inert gas, such as nitrogen, for the life of the container. Also, they are protected from the deleterious effects of light.

Another inherent advantage of pressure packaging is the complete freedom from atmospheric contamination afforded the contents of the package. Topical preparations utilizing Pfizer Hydrocortisone and the antibiotics—neomycin and polymyxin—as well as multivitamin preparations are particularly enhanced by this feature.

The Pfizer non-toxic plasticizers—Citroflex® A-2 and A-4 have proven highly effective for polyvinyl compounds used in pressure packed hair sprays and spray bandages.

Because of the firm conviction that pressure packaging will play an important role in the pharmaceutical industry, Pfizer is continuing to direct considerable effort towards the development of antibiotic, steroid and vitamin aerosol formulations. For a report concerning the role pressure packaging is playing, and will play, in the pharmaceutical industry write to Pfizer requesting reprints of the article, "Pressure-Packed Pharmaceuticals."

**Among the many other advantages of pressure packed pharmaceuticals are:**

**Application is fast, convenient, uniform.**

**A high concentration of a drug over a limited area may be obtained.**

**Direct contact with the injured area is eliminated, often reducing pain.**

- **No waste through intermediate applicator.**
- **Dosage may be controlled accurately with metered valves.**

*Science for the World's Well-Being*

**Pfizer**

*Manufacturing Chemists for Over a Century*

**CHAS. PFIZER & CO., INC. Chemical Sales Division, 630 Flushing Ave., Brooklyn 6, N. Y.** Branch Offices: Clifton, N. J.; Chicago, Ill.; San Francisco, Calif.; Vernon, Calif.; Atlanta, Ga.; Dallas, Tex.

### Edwards to Wrisley Post

Wayne E. Edwards has been appointed director of the greatly expanded Research & Product Development Division of Allen B. Wrisley Co., Chicago. In addition to research & Product Development, the newly formed division will supervise quality control. In this function, it will be responsible for (1) the inspection of incoming materials, (2) the maintaining of quality during manufacturing, and (3) inspection and approval of finished goods in accordance with manufacturing specifications it will establish.

Research in this new division will be divided between the creation of new products and the development and improvement of the Wrisley product line. Also, a section will research the technical aspects of packaging materials.

Mr. Edwards is a graduate chemist from the University of Southern California, and has had two years graduate work in business administration. He has been associated with Du Pont and spent eight years in the Purex Corp. laboratories where for the last 5½ years he directed product development and analytical research.

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### General Aerosols Expansion

General Aerosols, Inc., Shelton, Conn., an affiliate of Reed Research, Inc., is currently in the process of expanding its production facilities in conjunction with its "Aeromagic" product line. Plans call for installation of new filling equipment, and expansion of the production force from 10 to 30.

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### Attack Babbitt Exchange Plan

The plan of B. T. Babbitt Co., New York, aerosol marketer, to use United States savings stamps as premiums for its products came under attack last month by Rep. Abraham J. Multer of New York. Under the plan, agreed to by the Treasury Department, buyers of certain of Babbitt's products would be entitled to receive U. S. savings stamps in exchange for special Babbitt coupons.

Rep. Multer based his objection on the fact that the savings stamps would be used as "bait" to lure the American housewife to buy a particular brand of merchandise. "Try as it might," he declared, "the Treasury will not be able to keep the idea of winning government savings stamps apart from the promotion of a particular brand of merchandise." He pointed out that despite statements to the contrary, the impression is given that the government is "at least favorably disposed" to the products.

•

### Druk-Pak Names French Agent

Druk-Pak AG, Zurich, Switzerland, manufacturer of aerosol filling equipment, last month named Valortec A.A., 28 rue Marbeuf, Paris 8, France, to be its sales representative for France. The company, a specialist in packaging field sales, is headed by Emmanuel Bloch.

Valortec will handle Druk-Pak's line of pressure filling machines, propellant pumps, refrigerant machines, plus other equipment for the packaging field.

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### Urge Stronger Cosmetic Curbs

Stronger government control of the cosmetics industry was urged early last month by George P. Larrick, Commissioner of the U. S. Food & Drug Administration. Speaking before the Association of Food and Drug Officials of the U. S. in Boston, Commissioner Larrick revealed that the FDA is supporting legislation before Congress to require pre-testing of cosmetics before they are marketed.

He pointed out that, under existing laws, cosmetics do not have to be tested before they are sold, but that the "American woman is demanding greater safety in the beauty aids she enjoys."

•

### GAF Names Marketing Director

General Aniline & Film Corp., manufacturer of polyvinyl pyrollidone and other chemicals for the aerosol industry, last month named Stanley Lewis, a former executive at Lever Brothers Co., to be director of marketing.

•

### Schering Names Leitzow

Schering Corp., Bloomfield, N. J., has named Herman W. Leitzow to be vice-president for marketing and head of the newly-formed Domestic Marketing Division. He had been vice-president in charge of domestic sales.

### Colton Shifts Plant Operations

An increase in production facilities of Arthur Colton Co. to manufacture packaging machinery has been announced by Kenneth B. Holdidge, executive vice-president. Reason for the expansion, he explained, is the result of the recent acquisition of the Hope Machine Co. and a manufacturing arrangement with Alpha Engineering Works to make aerosol filling equipment. The new business resulting from these acquisitions has overloaded the company's two Detroit plants and another in Mancelona, Mich.

To solve this facilities problem, the Mancelona Plant, which formerly made punches and dies for rotary tablet presses, will manufacture Colton packaging machinery exclusively. The company is currently building a new plant of brick and steel construction in Elk Rapids, Mich. to manufacture the punches and dies.

The Colton Mancelona plant began operations in 1952. It has been expanded twice since that time to meet increasing production requirements. Henry Collins, former Mancelona plant manager will serve as plant manager for both the Mancelona and the new Elk Rapids operations.

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### Brockway Appoints Hawes

The Brockway Glass Co., Brockway, Pa., last month appointed John C. Hawes to the post of manager for marketing, advertising and promotion.

•

William Lambert, former editor of *American Perfumer*, was recently honored at a special dinner given by the American Society of Perfumers. Feature of the affair was presentation of a scroll by Oliver Marton, society president.

# INSECTICIDES

## PACK A LETHAL SALES PUNCH IN AEROSOL CANS BY CONTINENTAL

Insecticides are deadlier than ever, and insecticide sales prove it. Responsible for this new selling surge is the aerosol can, more convenient and more efficient. Of the more than 41 million cans sold in 1957, Continental supplied a large part. It was Continental, remember, who developed the low pressure aerosol that started this fabulous market on its way. For your insecticide, you can't do better than a superbly lithographed Continental aerosol. Because of its experience, Continental is able to produce aerosols at a most economical price . . . and give you the widest selection in size and style. Greatly expanded production facilities assure you of fast delivery wherever you're located. Research and engineering services are also available. Call Continental today.

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Central Division: 135 So. La Salle St., Chicago 3
Pacific Division: Russ Building, San Francisco 4
Canadian Division: 5595 Pare St., Montreal, Que.

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HAIR SPRAY | SPRAY BANDAGES | FRAGRANCE | DEODORANT | SHAVING CREAM | SHOE POLISH | ANTISEPTIC

### FTC Cites Fire Extinguisher

The "Kill Flame" fire extinguisher, a unit using a mixture of propellants 11 and 12, does *not* meet its advertising claims to be "safe", "non-Toxic", and effective "against all fires", the Federal Trade Commission charged recently. The Commission issued a formal complaint against the distributor of the product, Allchem Manufacturing Co., New York, naming both Mark Schrier, its president, and Charles Goldberg, principal stockholder.

The complaint alleges that "Kill Flame" is not safe and non-toxic when used to extinguish a fire because its propellant, in a flame and on hot surfaces, decomposes to yield carbon monoxide, hydrochloric acid, and "other highly toxic substances which may be harmful or lethal in a closed room or when no ventilation is provided." The complaint adds that the product is "not effective" in extinguishing sub-surface or deeply seated fires in such ordinary combustible materials as wood, cloth, and paper.

The respondents were granted 30 days in which to answer the complaint.

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### Bon Ami Clarifies Position

To clarify present and future news developments in which the company name appears, The Bon Ami Co. recently issued the following information:

"Present management of the Bon Ami Co. took office in July 1958, more than one year after Alexander L. Guterma left the company.

"Proceedings currently pending before the S.E.C. cover matters and transactions concerned only with past managements, including Guterma.

"Present management is cooperating completely with the S.E.C., although the proceedings before this agency do not in any way affect the operations and business of the Bon Ami Co.

"Present management is also cooperating with those stockholders who have started actions on behalf of the company against persons who were members of prior managements, to recover substantial sums as a result of their various improper transactions affecting the Company.

"Present management has revised Bon Ami's policies, added new products and is proceeding vigorously, with substantial success in a continuing program to rehabilitate this 75-year-old company."

•

### IF & F Appoints Sanders

As a further step in the company's expansion program, the appointment of C. Ray Sanders as manager of the West Coast Division International Flavors & Fragrances Inc. was announced late last month by the company's headquarters in New York. His responsibilities would include administration of the West Coast branch, as well as direction of sales operations of the company's van Ameringen-Häebler Division and the Polak & Schwarz Division in eleven Western States. He will make his headquarters at the company's new branch office, 7461 Beverly Boulevard, Los Angeles, Calif.

For the past three years Mr. Sanders was manager of the toiletries department of the Rexall Drug Co. in Los Angeles. Previously he had been associated with the Hudnut Sales Co. and with Marie Earle, Inc., a subsidiary of Coty, Inc., as managing director. He has long been active in the Toilet Goods Association and is currently serving as first vice-president of the California Cosmetic Association. During World War II he served as staff intelligence officer in the Air Corps with the rank of major.

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### General Chem. Names Kelley

The General Chemical Division of Allied Chemical Corp., New York, last month announced the appointment of James E. Kelley as assistant manager for sales at its New York office. Succeeding Mr. Kelley as manager of the division's Chicago office is O. W. Svenson, who was manager of General Chemical's Detroit office.

•

### Sladden to Shulton Post

Geoffrey S. Sladden has been named to the post of managing director of Shulton, Ltd., Great Britain, British subsidiary of Shulton Inc., New York aerosol and cosmetic marketer. He served as general manager of Shulton Ltd. since it was formed in 1957.

### Avon Plans New Expansion

Avon Products Inc., New York, a leading aerosol product marketer, recently revealed plans to establish plants in Germany, Great Britain and Brazil during the current year. The plant in Brazil is already in production, with selling starting in July, and the British laboratory will begin production this summer and begin selling in the fall.

Expansion of the company's U. S. installations is also going ahead full blast. A sales and distribution branch is being constructed near Rye, New York, to go into operation sometime next year. A new warehouse and shipping unit for the West Coast, at Monrovia, Calif., will begin operating this fall. Also, land has been purchased at Newark, Del., for a future site for the company's Middle Atlantic States branch.

The new construction in the U. S. is expected to free manufacturing space in Avon's existing plant for the installation of new aerosol and conventional filling and other manufacturing facilities.

•

### Shepherd to College Post

H. R. Shepherd, president of Aerosol Techniques, Inc., Bridgeport, Conn., custom filler, has been elected to the board of trustees of the Columbia University College of Pharmacy. The association of Mr. Shepherd with the college began early in 1958 with an ATI grant to help the college build a new aerosol research laboratory. The laboratory, under the direction of Prof. Joseph L. Kanig, is being utilized in the college's graduate program for research projects involving the development of pressurized pharmaceutical dosage forms. Similar laboratories are maintained by St. John's University and the Philadelphia College of Pharmacy and Science.

Mr. Shepherd was for two terms chairman of the Aerosol Division of the CSMA. He is the editor of the forthcoming "Encylopedia of Aerosols", first aerosol technical book to be published in the U. S. Formerly with Bridgeport Brass Co. and Connecticut Chemical Research Corp., he founded Aerosol Techniques in 1955.

WORLD-WIDE RESOURCES

WORLD-WIDE SERVICES

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### Allied Revamps Exec Staff

Allied Chemical Corp., New York, last month announced three changes at its top executive level. The company, through its General Chemical and Solvay Divisions, is an important producer of aerosol propellants and solvents. All of the changes become effective in September when Glen B. Mills, president, reaches the retirement age of 65.

Kelly by H. Fisk, chairman of the board and chairman of the executive committee, will become chairman and chief executive officer. Harry S. Ferguson, executive vice-president and a member of the executive committee, will become chairman of the executive committee and chief administrative officer. Chester M. Brown, corporation vice-president and president of the National Aniline Division, will become president and chief operating officer. Mr. Brown was formerly president of the General Chemical Division.

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### California Studies Extinguishers

The Senate of the State of California last month introduced a resolution to empower the State Fire Marshall and the State Fire Advisory Board to make a complete study of fire extinguishers. The study, if approved by the Assembly, will gather data for proposed legislation to "effectively control the sale, distribution, use, and the servicing and recharging of fire extinguishers and appliances and devices for extinguishing fires." According to the wording of the resolution, aerosol extinguishers will be among those studied.

•

### Colgate Acquires Sterno Co.

A $2-million stock exchange arrangement last month paved the way for acquisition of Sterno Corp. and its subsidiaries by The Colgate-Palmolive Co., New York. Sterno markets the nationally known "Sterno Canned Heat" and a line of stoves, food warmers, chafing dishes, etc. Colgate markets an extensive line of toilet goods, soaps, detergents, etc., including aerosol shave creams, room deodorants and similar products. Colgate is currently using butane-propane mixtures as propellants for its shave creams.

•

### Bradley-Sun Names McCarthy

Appointment of Richard H. McCarthy, Jr., as director of sales was announced by Bradley-Sun Division, American Can Co., New York. Manager of the division's Washington, N. J. plant for the past 18 months, he will direct sales of the division's product line of collapsible metal and plastic tubes, plastic bottles, aluminum aerosol containers, and other items.

Richard H. McCarthy

He joined Sun Tube Corp., a predecessor company, as a product manager in sales in 1955 after sales experience in other fields. He later served as a sales manager before transferring to production work. He holds a degree in electrical engineering from the University of Pennsylvania and did graduate work in marketing and accounting at the university's Wharton School.

•

### Wallerstein Opens New Offices

The Wallerstein Co. recently opened its new administration building at Mariners Harbor, Staten Island, N. Y. This is the first time in 40 years that the company's offices, manufacturing facilities, and laboratories, are located together at the company's plant site.

Wallerstein is a leading producer of enzymatic products for the pharmaceutical, chemical specialties, and aerosol industry. The company was founded in 1902.

•

### Roux Names British Agent

Roux Laboratories, Inc., New York, aerosol hair coloring marketer, last month named Reeson Laboratories, Ltd. of London to be sole distributor of "Roux" products in the United Kingdom.

### List Aerosol Contest Details

The Chemical Specialties Manufacturers Association, New York, last month announced details of its 1959 Aerosol Package Contest. Entry forms and final details are scheduled to be mailed to fillers and vendors of aerosol packages about Sept. 1, with the contest winners to be announced and the awards given during the 46th annual meeting of the CSMA in Washington on Dec. 8.

Though sponsored by the Aerosol Division of the CSMA, entry in the contest is open to *any* aerosol marketer or filler. Packages entered will be requested to be sent to the CSMA offices during September 1959.

•

### Fry Products to Canada

Suprini, Ltd., Montreal, a newly-formed marketing company, last month launched an aerosol vegetable protein spray for use in place of butter and shortening in frying pans or baking dishes. Called "Fatless Fry", the nine-ounce container will retail for $1.79, and, according to Suprini, will last about six weeks in an average home.

Principals in the new aerosol marketing company are two Montreal carpet retailers, Hubert and Pierre Lalond, and Jean P. Gelinas. Sales director is George Roberts, formerly with Kraft Foods.

At the same time came word that Pam Industries, Chicago, will launch its "Dry Fry" on the Canadian market. Pam Industries' product will be custom filled in Canada.

•

### Raven Rumell Joins Shulton

The appointment of Raven Rumell as a sales supervisor for the consumer products of the Fine Chemicals Division has been announced by Shulton, Inc., New York. He will be responsible for sales of consumer chemicals (including the Bridgeport Aer-a-sol line recently acquired by Shulton, Inc.) on the West Coast and will make his headquarters at the Shulton offices in Los Angeles. Prior to joining Shulton, Mr. Rumell was assistant to the general sales manager of the Los Angeles Soap Co.

# Equipment—Processes—Bulletins—

### Colton-Hope Ingredient Filler

A new Colton-Hope "Model 15RF-2" two-line production machine for filling cans and bottles with semi-viscous and viscous materials is announced by Arthur Colton Co., Detroit. The machine features an adjustable filling head assembly controlled by a handwheel to facilitate set-ups for containers of different heights. It has a filling range from ¼-oz. to one quart. Production rate is from 20 to 60 fills per minute.

The machine is equipped with a rising table for bottom-up fill, and all operating units are enclosed and located out of the product zone. A feed bar-type conveyor with easily removed bars provides gentle, swift container movement. A new diagonal filling position of the containers gives handling advantages and conserves space. A no-container, no-fill device prevents feed of material when a container is not in filling position.

Power for the unit is provided by a ½-hp motor operating through a variable speed drive. A micrometer type quantity adjustment permits accurate material feed settings. Fill accuracy of the machine is plus or minus ½ of one percent by volume.

A vertical container height range within a six-inch total variation can be handled on the "Model 15RF-2." The stainless steel hopper has an 80-qt. capacity. Optional accessories such as infeed and discharge conveyors, jacketed hopper or hopper agitator are available for the new unit.

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### Valve Specification Booklet

Specifications for three types of aerosol valves are listed in a new bulletin prepared by Valve Corp. of America, Inc., Bridegport, Conn. The valves are VCA's "B-9", for use in standard one-inch opening containers; the "B-18" metered valve, for glass bottles or one-inch opening containers; and the "B-8" valve, for glass bottles.

Data includes sizes of openings and materials in which valve components are available. Copies of the bulletin and additional information are available free from the company at 1722 Fairfield Avenue, Bridgeport.

•

### Official Test Insecticide

A new lot of Official Test Insecticide is now available from the Chemical Specialties Manufacturers Association, 50 East 41st Street, New York. The O. T. I. is used primarily in making the Peet-Grady Test for flying insects, and this lot has been prepared, tested, and filled under the direct supervision of the Scientific Committee of the Insecticide Division. Price for the lot, which is not to be used after Dec. 31, 1962, is $8 per dozen to members of the CSMA and $14 per dozen to non-members. Prices are F. O. B., New York, express collect, since the packages cannot be mailed. Orders for export are F. O. B. New York, for delivery to forwarder in the U. S.

### New Acetophenone Bulletin

Union Carbide Chemicals Co. a division of Union Carbide Corp., New York, has issued a new 12-page bulletin describing the reactions and pharmaceutical applications of acetophenone. The material is widely used for its solvent and odorant properties, and because of the reactivity of its aryl, carbonyl and methyl groups as an intermediate in the synthesis of a broad range of compounds.

Acetophenone is reported to act as a synergist for insecticides containing pyrethrins, and as an intermediate for the production of novel antifungal and antibacterial compounds. Resins based on it are utilized in the manufacture of lacquers and it can be reduced to phenyl methyl carbinol, a base and fixative for perfume.

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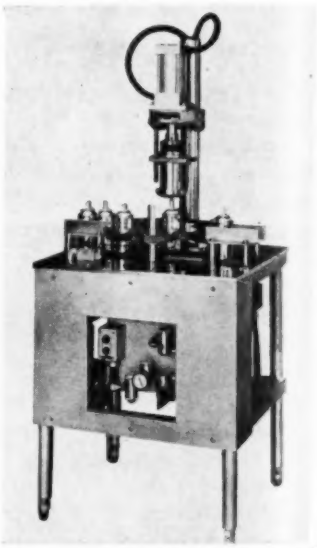
### Aerosol Crimper-Coder



A new aerosol crimper that can be ordered with or without a code dating attachment has been announced by John R. Nalbach Engineering Co., 6139 Ogden Ave., Chicago 50, Ill. Called the "Model No. 1-H.A.C.", the new unit is equipped with a star-wheel which indexes only when a can is properly pocketed.

The new crimper is said to have been designed to eliminate the harmful effects of washing down with steam or hot water, thus making it particularly applicable for a food or pharmaceutical filling line. The

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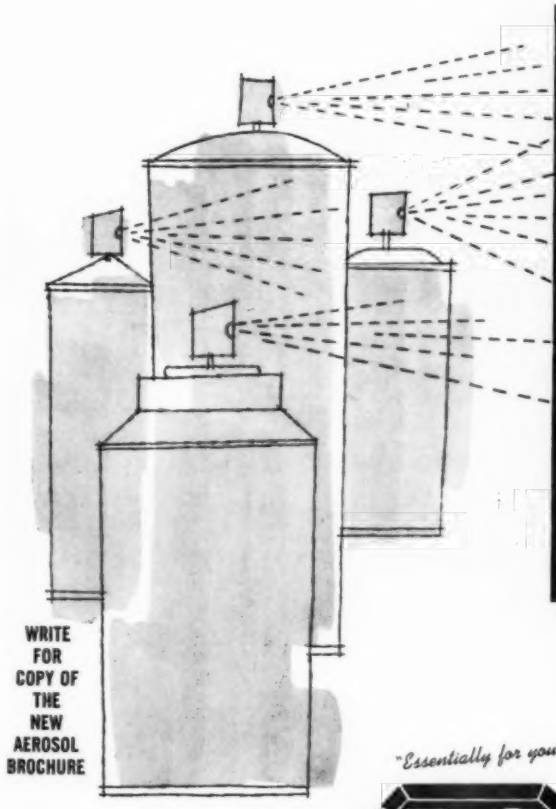

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crimping head is adjustable for both the height and depth of crimp desired. Unit is equipped with a cap and valve centering device and has easily removable hardened crimping jaws and mandrel. It can be operated manually for single-cycle operation.

•

### *Glossary of Packaging Terms*

A special inventory reduction offer for the Packaging Institute's widely-used "Glossary of Packaging Terms" has been announced by Harry Vick, Jr., chairman of the Publications Committee of the Institute. The glossary, which defines the language of the $15 billion packaging industry, is now available at $3.00 per copy.

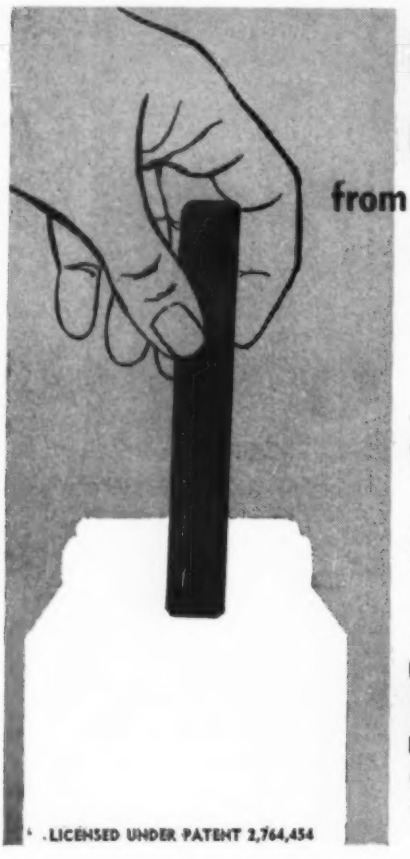
The "Glossary of Packaging Terms," a 6-by-9-inch hard cover volume, contains 323 pages of definitions. It is the second edition of this Packaging Institute publication. Accepted in the U. S. Government Interim Standard No. 0075, Business and Defense Services Administration, Department of Commerce, this is the only publication of its type serving the entire packaging field.

The special offer is the result of the Packaging Institute's moving to new quarters, and consolidation of its extensive stock of technical publications on all phases of packaging. The glossary, which originally sold for $6.75, may be obtained at the special price from the Packaging Institute office, 342 Madison Ave., New York 17, N. Y.

•

### *British Pharmaceutical Filler*

A new sterile filling machine primarily designed to fill very viscous solutions in small quantities has been developed by A. J. Manning Ltd., Stonefield Close, Ruislip, Middlesex, England. The unit can be bench-mounted, and arranged for either hand or foot control. It incorporates a stainless steel, glandless measuring pump with mechanical valves. Standard measuring pumps give the unit filling ranges between 0.5 ml. and 50 ml.

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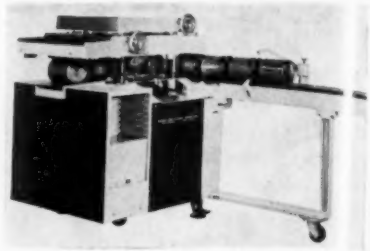
### *Lithographed Can Imprinter*



Color, name, formula, batch number, and other data can be imprinted to register on lithographed aerosol cans in one operation with the new can imprinter developed by Charles Beck Machine Corp., Dept. 1, King of Prussia, Pa. The clarity and quality of the imprint is said to match the quality and style of the lithography on regular aerosol cans.

Only two settings are required to change the can size from small to maximum aerosol sizes, and the individual type can be changed in a matter of minutes. The unit occupies 4 x 8 feet of floor space and is built on casters for mobility. It is completely self powered with a ¾ H.P. variable speed drive adjustable for 15 to 60 cans per minute.

•

### *Liquid Filling Bulletin*

A new illustrated bulletin describing its line of high accuracy liquid filling equipment has been issued by Popper & Sons, Inc., 300 Fourth Ave., New York 10. The units, which fill at speeds of from 3,000 to 15,000 containers per hour, handle fills of from one dram to 12 ounces.

A variable speed drive permits the user to fill four to eight containers at a time. All shapes of glass and plastic containers may be handled.

Copies of the bulletin are available by writing directly to the company.

•

### *Aerosol for Sheep Footrot*

Footrot, a leading ailment of Australian sheep, can be treated with a new aerosol product developed by Sigma Co., Ltd., Collins Street, Melbourne, Aust. Called "Sprot," the product is used to spray the infected feet, after trimming. It contains Dequadin, a polymethylene compound.

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Often Chlorothene permits savings of up to 2½ cents per can when it completely replaces propellant 11! And Peet-Grady tests on insecticides prove that when Chlorothene replaces propellant 11 in part or in whole, there is no change in effectiveness of the formulation.

Chlorothene has high solvency, which helps to speed manufacturing operations. For example, it can be added directly to insecticide concentrates with excellent results and reduced viscosity. And moderate vapor pressure means fast, easy handling during mixing and filling. Tests have proved that aerosols containing Chlorothene are equal to the best of other mixtures with regard to valve leakage and can corrosion, and in retaining effectiveness of formulation during storage.

Brighten your profit picture by using low toxicity Chlorothene to cut ingredient costs! For additional information on its uses, properties, cost and performance, contact THE DOW CHEMICAL COMPANY, Midland, Michigan, Department 707B8.

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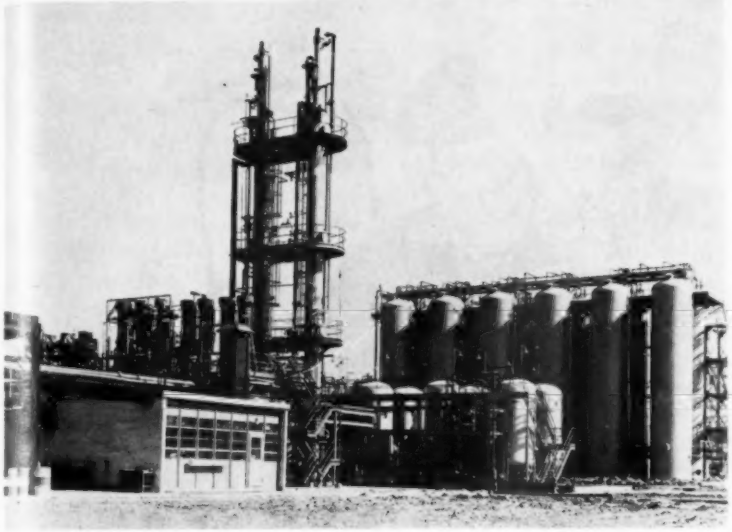
## Carbide Reveals Improved Propellant Making Techniques



Several improved processing techniques incorporated in its new 50-million-pounds-per-year "Ucon" fluorocarbons plant were announced by Union Carbide Chemicals Co., Division of Union Carbide Corp., New York.

Included in these improved techniques are highly-advanced dehydration by molecular sieves, and an ultra-modern system of instrumented production control. According to John R. Hulten, manager of the Fluorocarbons Division, the overall advancement of the operation means that all grades of fluorocarbons will be available for shipment from the plant's extensive storage facilities, which include 12 38,000-gallon tanks and several smaller units.

Fluorocarbons currently being turned out at the new plant are "Ucon 11" (trichloromonofluoromethane), "Ucon 12" (dichlorodifluoromethane), "Ucon 22") (monochlorodifluoromethane), "Ucon 113" (trichlorotrifluoroethane), and "Ucon 114" (dichlorotetrafluoroethane).

### New Colton Bottom Coder

A new production line bottom coder that makes a non-transferable embossed code on the bottom of a metal container has been announced by Arthur Colton Co., Detroit.

The machine will code-emboss all sizes of open-mouth cans from ½ pint to one-gallon capacity at speeds of from 15 to 35 containers per minute. The code is embossed automatically on the bottom of a container each time the timing screw on the machine feeds a can into coding position and holds it while the embossing operation is performed. Embossing of the code in a container is accomplished by a fixed female die in the base of the machine and a moving upper male die that is fed downward by an air cylinder.

The unit can be added to existing production lines, and can be moved from one line to another or built as an integral part of a Colton-Hope high speed filling machine. It includes a variable speed drive, self-aligning ball bearings, cross conveyor chain and timing screws to feed specified size of containers. Coding dies accommodate two rows of six letters or digits each. Initials and special code insignias are also available.

•

### Swirl-Type Overcap

A new molded polythylene aerosol overcap that simulates a swirl of whipped cream has been introduced by Automatic Plastics, Berkeley, Calif. The cap will appear first on the new package for Avoset Co.'s "Qwip", a nationally marketed whipped cream topping.

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## Aerosol Use Broadens Market Potential for Ethylene Oxide

NEW and diversified uses for ethylene oxide as a sterilant have been found since U.S. Department of Agriculture scientists, working in cooperation with the U.S. Army Chemical Corps, demonstrated that this highly flammable chemical could be used safely as an aerosol-dispensed product.

As a result of this research by Dr. Robert A. Fulton of USDA's Agricultural Research Service in 1957, industry has been working to develop many possible uses. Surveys have shown this product, according to the USDA, to have a greater market potential than any of the present aerosol products. Aerosols containing ethylene oxide are already being used at USDA's Animal Disease Laboratory, Plum Island, N. Y. The sterilant holds promise for the control of diseases in beehives, and as a method of controlling insects and other destructive organisms in stored grain.

Ethylene oxide aerosols are also being used in hospitals to sterilize plastic materials that could be damaged by exposure to heat sterilization or strong sterilizing chemicals. There may be an even wider hospital use for the sterilant as a means of combating the growing threat of staphylococcus infection. In recent years, hospitals across the nation have found the *staphylococcus* genus of bacteria more and more difficult to control. This and other infective bacteria have demonstrated increasing resistance to antibiotics.

For industrial uses, ethylene oxide aerosols are proving useful in the destruction of unwanted bacterial spores during the manufacture of penicillin. Ethylene oxide is also used to sterilize drugs and drug containers.

The sterilant has been used in the holds of ships. Hotels are investigating the use of this chemical for sterilizing bedding and furniture in gas-tight rooms, and operators of skating rinks and swimming pools see a use for ethylene oxide in sterilizing rental shoe skates and swim suits.

According to Dr. Fulton, ethylene oxide has killed *every* virus or bacterium against which it has been tested. It does not leave a residue. In addition, it sterilizes effectively at a wide temperature range—from about 70° to 140° F. On one occasion, it was used to sterilize a commercial airliner in which a container of live polio virus had been broken. Dr. Fulton and other ARS scientists developed this safe way of handling ethylene oxide under contract to the Army, which was in need of a sterilant other than heat for photographic films and other sensitive materials.

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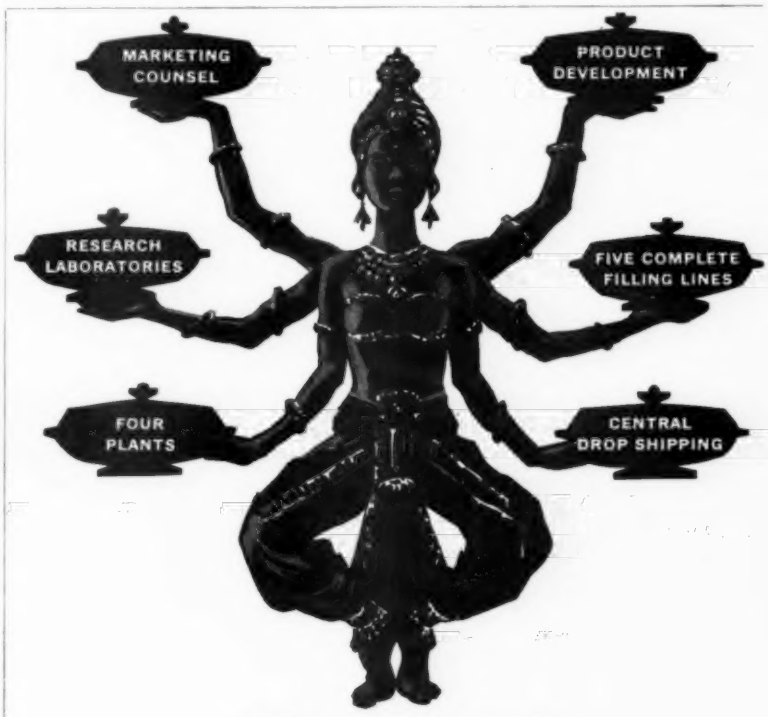
### British SCC Elects Officers

The British Society of Cosmetic Chemists elected R. H. Marriott, of County Laboratories, Ltd., as president for the coming year. Also elected at the society's recent annual meeting were: vice-president,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Dr. H. W. Hibbott, of D. R. Collings Ltd.; honorary secretary, L. S. Smith, of Antoine Chiris Ltd.; and honorary treasurer, R. E. Spate, of Re. Campbell and Co. Ltd.

The executive council includes Dr. K. G. Johnson, County Laboratories; Dr. A. W. Middleton, Chesebrough-Ponds, Ltd., and Miss I. P. Torry, Lentheric, Ltd.

•

### Corry to Con Can Post

John A. Corry has been appointed new products coordinator for aluminum cans in the Metal Division of Continental Can Co., New York. Formerly an assistant products sales manager in the Metal Division, he will now be responsible for the coordination of development, initial production and sales efforts necessary for the successful introduction of aluminum containers in the Division's product line.

•

### Colgate Revamps Research Staff

Dr. William J. King has been named manager of Colgate-Palmolive Company's Laboratory for Dental Medicine Research, a unit of the company's Corporate Research and Development Department which operates on the New Brunswick campus of Rutgers University, the State University of New Jersey. To replace Dr. King as head of the Toilet Articles Division oral products research section, Dr. John M. Longfellow was appointed.

Dr. Hyman Henkin, former head of the hair products section, was named head of the oral products section and Dr. Richard K. Lehne, who joined the Toilet Articles Research Department when Colgate acquired the Wildroot Co., has been appointed head of the hair products section.

•

### New British Product Line

A line of three aerosol toilet goods packages, including a hair spray, talcum powder, and perfume purse atomizer, has been introduced by Cavalade Beauty Preparations Ltd., 9 Park Hill, London, S.W. 4. The purse-sized perfume package is in a U. S.-made Risdon "Mini-Mist" metered container.

### Nixon Blasts Fair Trade

Vice President Richard M. Nixon, in the past a supporter of the Fair Trade Bill, recently dismayed backers of the bill just before it cleared the House Rules Committee by citing the manifest dangers in federal trade bills being considered by committees of both houses of Congress. In a letter to Charles F. Fort, president of the Food Town Ethical Pharmacies, Baton Rouge, La., Mr. Nixon declared:

"In my opinion, fair trade or price fixing is inconsistent in a free enterprise economy. Certainly at a time when we are already greatly concerned with high prices the passage of fair trade legislation would contribute nothing to reasonable price stability or future economic growth."

With this letter Mr. Nixon puts himself in the opposition camp, which currently includes the Antitrust Division of the Justice Dept., the USDA, the Federal Trade Commission, the Department of Commerce, the American Farm Bureau Federation, the Cooperative League of the U.S.A., and the National Association of Consumer Organization.

Chief backers of the bill are the National Association of Retail Druggists, the Proprietary Association, the National Retail Hardware Dealers Association, and other trade groups.

•

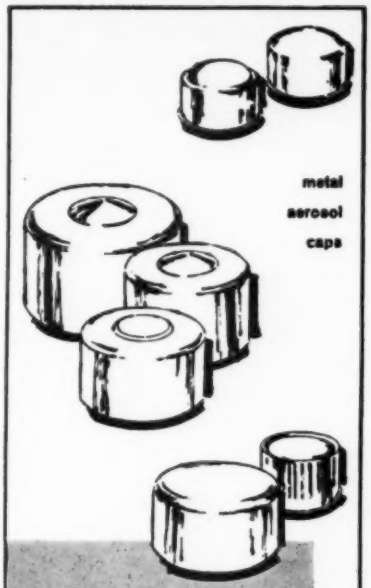
### Scovill Consolidates Offices

Scovill Manufacturing Co., Waterbury, Conn., has announced that as of July 27 the Eastern District Sales Office of its Cosmetic Container Division will be moved from its present location in the Chrysler Building East, New York City, to its main office in Waterbury, Conn. Lamson M. Scovill will continue in his present capacity as eastern district sales manager. He will continue to be assisted by Frederick Gaudineer and Gordon Petrie.

•

### Armstrong Names Everett

Armstrong Cork Co., Lancaster, Pa., has named J. Franklin Everett to be manager of closure technical service. He succeeds the late Joseph A. Benner.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### *Dart Given Honorary Degree*

Justin Dart, president of the Rexall Drug and Chemical Co., Los Angeles, was awarded an honorary doctor of science degree at commencement exercises of the New England College of Pharmacy in Boston, June 7.

The citation presented to Mr. Dart stated: "A dynamic administrator whose creative thinking and decisive action have serviced and expanded an organization preeminent in the pharmaceutical industry; his capabilities and vision in the fields of marketing and sales, and his humanitarian endeavors have placed him among the outstanding leaders in the business and civic life of the nation."

•

### *Shulton Appoints Anderson*

The appointment of Alastair B. W. Anderson as a product manager has been announced by Shulton, Inc., He will plan and coordinate the marketing and merchandising program for Bronztan, Thylox Medicated line, Ice-O-Derm and other new products.


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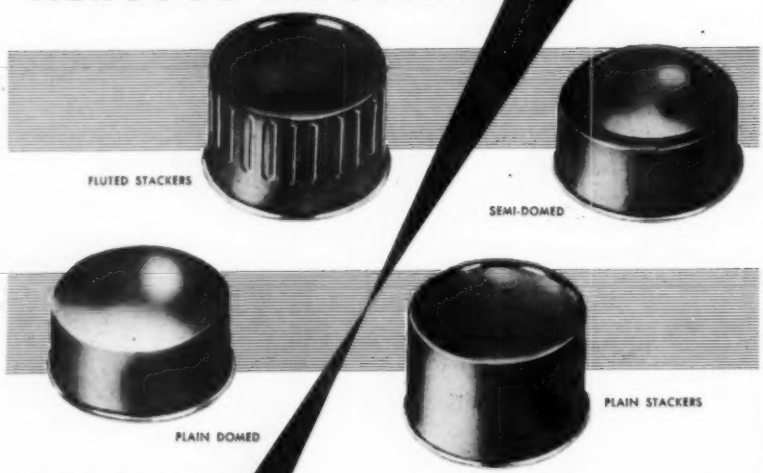


We also manufacture tin plate Screw Caps from 18mm to 120mm.

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All of Penn's customers receive superior service and careful attention on every order. You are assured of top quality workmanship, the right price and immediate delivery.

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### *Crown Elects 2 Execs*

The Crown Cork & Seal Co., Philadelphia, has elected William D. Wallace and Lowell H. Smith vice-presidents. Mr. Wallace, former director of manufacturing, will move to the post of vice-president and director of operations, in charge of all of the company's manufacturing, industrial relations, and engineering activities. Mr. Smith will continue as general manager of Crown's Machinery Division.

John L. Carnie, general manager of Crown's can operations since 1953, will succeed Mr. Wallace as director of manufacturing. Mr. Carnie will assume complete responsibility for the operations of the company's crown and closure plants at Baltimore, Md.; Leeds, Ala.; St. Louis, Mo.; and San Francisco, Calif; and Crown's can plants at Philadelphia, Pa.; Baltimore, Md.; Atlanta, Ga.; Winchester, Va.; Chicago, Ill.; and Orlando and Bartow, Fla.

•

### *Rexall Acquires IMCO*

The Injection Molding Co., Kansas City, known widely as IMCO, a manufacturer of plastic containers, has been acquired by the Rexall Drug and Chemical Co., Los Angeles, for an undisclosed number of shares of Rexall stock. William Archer, president of IMCO, will continue as active head of the firm.

"This is an entirely new venture for us," Justin Dart, Rexall president, said. "Our chemo-plastics division has not previously been engaged in the plastic bottling field."

•

### *Lehigh Names Amorosi*

Lehigh Chemical Co. of Chestertown, Pa., announces the appointment of Albert E. Amorosi to its research staff. He will devote his chemical research experience to the development of Lehigh's synthetic "Anderol" lubricants for military, industrial and sporting goods users.

A graduate of LaSalle University, Mr. Amorosi was formerly from the Alox Corp., of Niagara Falls, where he was chief chemist. He has been a member of the ASTM Committee D2 on Humidity Cabinet Testing.

## *Is the Insecticidal Efficiency of Pyrethrum Affected by Perfumes and Aromatics?*

NEWS recently reached the United States that Stafford Allen and Sons, Ltd., London, England, have been circulating reports to the effect that some aromatics used in perfuming insecticides may produce unfavorable effects on the insecticidal efficiency of pyrethrum insecticides. In response to a query from *Aerosol Age*, R. P. Merritt, director of Stafford Allen & Sons, Ltd., advised as follows:

"Some considerable time ago we noticed the very peculiar properties of certain aromatics which were commonly used for perfuming insecticides. We were fortunately in the position that in our research and biological laboratories, with our specialized knowledge of both perfumes and insecticides, we were able to carry out a coordinated research program to study perfuming of insecticides, with particular emphasis on the insecticidal properties of the sprays and aerosols so perfumed. This has proved to be a very long term project, since it is essential to study the subject over a period of 12 months and more. As a result of this work, we market not only insecticides but also perfumes which we have proved by experience and trial to be stable in these insecticides."

In response to this magazine's request for further specific details on any such studies Stafford Allen may have made on the subject, Mr. Merritt replied that "Unfortunately such information as we have available must be classified as private and we do not feel that we are in a position to send you any details of our studies. All we would say is that we feel that people who wish to perfume their insecticides should be absolutely certain that the perfumes they buy are only those which have been thoroughly tested and proved to be compatible with insecticides they wish to use under normal storage conditions."

*Aerosol Age* checked the Stafford Allen claims with a number of authorities (both in England and the U.S.) having extensive experience both with insecticides and perfuming materials. In general it was found that there appears to be *little* or *no* documented foundation for any theory that perfumes destroy pyrethrins. One British source advised that, while they have also heard the claim that some perfume materials destroy pyrethrins on storage, they have been no more successful than has *Aerosol Age* in getting details from Stafford Allen as to specifically *what* aromatic materials are charged with having this unfavorable effect. This correspondent indicated that his firm has used a wide variety of perfumes of all compositions and has never encountered one which exhibited any unfavorable effect on the biological efficiency of pyrethrins.

Another source advised that he is unaware of any recent work on the effect of toxicity of mixing perfumes with pyrethrum sprays. In his opinion, perfumes would not be expected to reduce the activity of the pyrethrins, either by inducing polymerization or accelerating oxidation or hydrolysis. It is possible, this source indicated, that aromatic materials *might* reduce the effect of toxicity of a perfumed insecticide, first by acting as a repellent, (reducing the time of contact of the insect with the treated surface and consequently the rate of accumulation of insecticide on the insect); and secondly, by reducing the availability of the insecticide to the insect whether from a surface deposit or from an aerosol. On the other hand, it was suggested, that some perfumes might be attractive to certain species of insects and thus could be counted on to enhance the effect of toxicity of the pyrethrins.

Avebury Research Laboratories is reported to have been carrying out an


AEROSOL DISCHARGE RATE DETERMINATION APPARATUS

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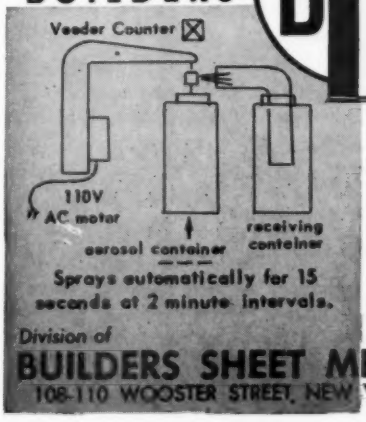


Sprays automatically for 15 seconds at 2 minute intervals.

You should know the discharge rate for each valve and actuator you are considering.

If the product is used up too quickly or too slowly due to an improper valve or actuator, the consumer may not re order. Know how many times the actuator will be pushed to expel the contents.

Also use as an automatic spray unit for checking odorants, deodorizers, insecticides, etc.

Operate all tests with same temperature and number of actuations.

Weigh can before and after to give amount used by each valve or actuator tested.

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Publishers of "European Aerosol Survey," a quarterly periodical

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extensive investigation into the effect of perfumes on pyrethrins and synergized pyrethrins. This work is being done for a private client and the laboratory is not at the moment free to reveal the results. It is possible, however, that after the investigation has been completed, it may be decided to publish these research findings.

Still another American source reported that this general subject has been discussed for a number of years, but that little reference has been made to the matter for the past 20 years or so. Back in the 30's, when most of the insecticides in use were perfumed oil sprays based on pyrethrum, a certain amount of statistical evidence was accumulated which supposedly demonstrated that certain perfume ingredients, specifically heliotropine, did reduce the activity of pyrethrum. Actually, however, this source indicates that there is little or no foundation for any belief that any perfumes used in a pyrethrum insecticide may have any unfavorable effect on the toxic efficiency of the product.

Stafford Allen, incidentally, markets a line of perfumes used in insecticides, as well as various pharmaceuticals, insecticide products, etc. ★

•

### O-I Names 3 in Sales

The appointment of a sales research manager, a regional sales manager and two branch managers has been announced by the Libbey Glass Division of Owens-Illinois Glass Co., Toledo, O.

John V. Higgins, of Los Angeles, Western regional sales manager, has been promoted to sales research manager. He will be located at O-I's general offices in Toledo.

Paul F. Zimmerman, manager of the San Francisco sales branch, is the new Western regional sales manager and will continue to make his headquarters in San Francisco.

Larry G. Busdieker, manager of the Seattle sales office, is the new San Francisco branch manager. He was succeeded as Seattle manager by Joseph V. Shipman of the Division's Philadelphia, Pa., branch office.

### Airco Builds New Lab

Air Reduction Co., New York, announced plans to construct a test laboratory in Franklin Township, N. J. Designed to supplement the facilities of Airco's Central Research Laboratories at nearby Murray Hill, N. J., the new laboratory will be devoted to research on fuels and oxidizers. The new test center will provide facilities for laboratory, pre-pilot, and pilot scale operations.

## European Meeting

(*from page* 31)

xelles (France), speaking on "Internal Protective Lacquers,' corrosion problems are so varied that no standardization is possible. Each formulation, he claimed, must be studied separately and an appropriate lacquer worked out for it. Experience has shown that the choice of good ingredients is rather wide. From his comments, French can makers not only have difficulty in getting lacquers which adequately protect against corrosion, but also lacquers which properly adhere to the cylinder walls. In actual practice, their cans seem well protected, with corrosion problems largely solved.

The kind, variety and nature of the problems confronting the industry in connection with standards was excellently covered by Mr. Tangermann, of Germany, in a paper titled "Possibilities of Standardization in the Aerosol Industry." That Mr. Tangermann has had much experience in this field, particularly with food cans, was evident from the wealth of material and references he cited. After analyzing the container field, he admitted that with the variety of types, sizes and materials used (tin plate, lacquered black plate, aluminum, glass, plastic-coated glass, and plastic) any material standardization would be impracticable. But he did urge that standards should be adopted, at least, on a method for measuring container capacity and on the size

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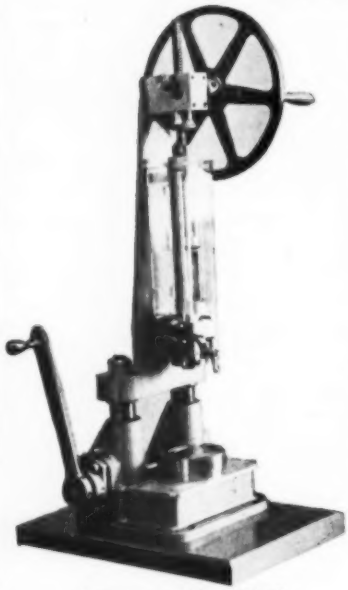

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Can Sampling Units — Piercing or Valve Actuating
Pressure Gauging Unit — Pressure Balance or Water Filled
Test Ovens — Standard or Custom Built
Instantaneous Chiller Units—Mechanically Refrigerated
Electric Hot Water Test Bath
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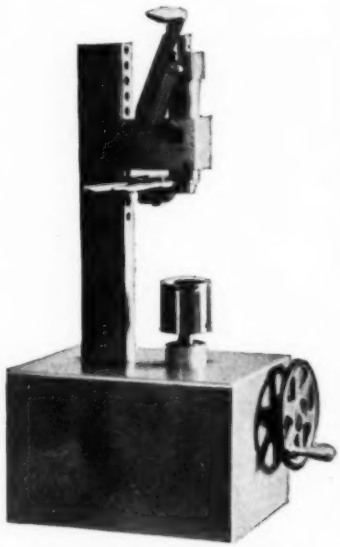
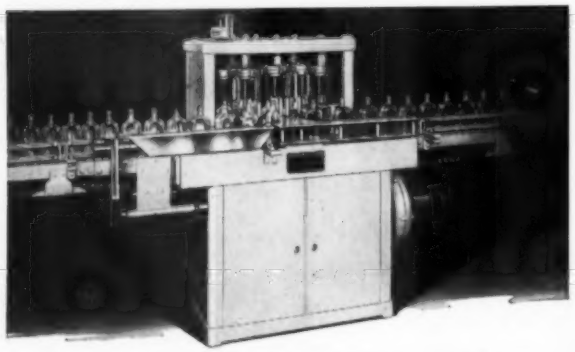


Foresman Hand Operated Vial Capper





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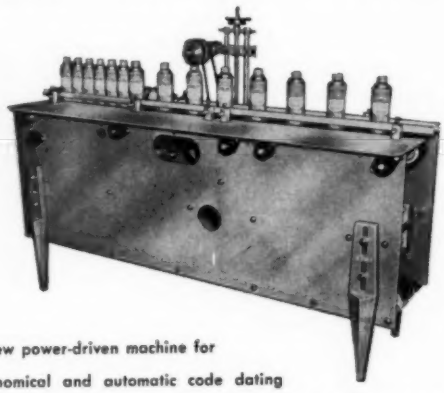

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of opening for the one inch mounting cup.

As to the former, he urged a method in which the can, with valve and dip-tube in place, would have two small holes drilled about ¼ inch apart at the highest point, which would be presumably through the bottom of the mounting cup (what he would do with glass bottles was not mentioned). The can would be weighed empty and then weighed again, filled with water at 20°C. The difference between the two weights, plus a certain factor, would represent the container capacity in millilitres (ccm) and taken as standard. A designation in ounces is not recommended in practice, since there is little or no real relationship between the stated ounce size and actual volume which the container will hold.

For a start, at least, four different sizes of aerosol containers were recommended: 90, 220, 400 and 600 ccm. It was further suggested that capacity could be maintained within certain tolerances, as already standardized for European fruit and vegetable tins. Overall size dimensions would not be attempted so long as the volume standards were adhered to.

On the one-inch aperture, Mr. Tangermann showed that among cans from seven different European manufacturers only three conformed in practice to the supposedly standard 25.4 mm opening. Others ranged from 25.171 to 25.415 mm. Recommended was a standard 25.4 with a tolerance of ± 0.1 mm. Also urged were standards on packaging accessories, container head space for certain product types, shipping cartons, etc.

It was suggested that a start should be made at national levels, each country taking up one or two standards and not duplicating standards attempted in other countries. This would, in time, lead to an overall and all-inclusive international standardization, without the complications of each separate country trying to bite off too much at one time. The Technical Committee of the new Federation of European Aerosol Associations would coordinate the work. In the end, application could be made to the Technical Commission of the ISO (International Standards Organization) to include aerosol dispensers in their field of activities.

Although not overly optimistic about the length of time which might be required for this, Mr. Tangermann did point out that surprisingly quick results have recently been obtained in the field of fruit and vegetable tins where standards for the European Common Market countries will go into effect within the next 12 months. This is additional evidence that the European "one market" idea is making progress.

The American "round table" technique, with open questions from the floor and unprepared answers from a panel of experts, is little known in Europe and what was supposed to be an open discussion on propellants turned out to be actually another succession of good technical papers. Mr. Lessenich (Germany) covered the fluorinated hydrocarbons, Dr. Kubler (Germany) vinyl chloride and methylene chloride, Professor Haase (Germany) the new $CO_2$ transparent dry ice, and W. G. Delmore (Switzerland), nitrogen. As a result of a time limitation, there were no questions asked and the validity of this method of presentation will have to wait for the next meeting for a true test. Unfortunately, Mr. Schloss (Germany) who was supposed to cover butane and propane was not able to be present. There is much interest in the use of this propellant in Europe and some French loaders are using it exclusively in a 36-ounce impact extruded aluminum can, a really big one.

The difference in approach to problems in the aerosol field between the USA and Europe could not have been better illustrated than by comparing the foregoing papers with that of Glen A. Piper (USA),

(*Continued on page* 74)

TABLE III

*Aerosol Can Corrosion Tests at 120°F.*
(1.0 pound hot tin plate body and 1.25 hot tin coated bottom)

| *Can No.* | *Propellant System* | *Moisture Present* | *Months Storage* | *Liquid Analysis Chloride ppm* | *Acids ppm* | *Internal Condition of Can After Test* |
|---|---|---|---|---|---|---|
| 1 | 50:50 Chlorothene and Propellant 12 | 300 ppm | 2 | 0.6 | 3.3 | Excellent |
| 2 | | 300 ppm | 2 | 0.7 | 3.3 | Excellent |
| 3 | | 300 ppm | 4 | 0.0 | 2.0 | Excellent |
| 4 | | 300 ppm | 4 | 0.1 | 2.0 | Excellent |
| 5 | 50:50 Chlorothene and Propellant 12 | 580 ppm | 2 | 0 | 0 | Excellent |
| 6 | | 580 ppm | 2 | 0 | 0 | Excellent |
| 7 | | 580 ppm | 4 | 2 | 3 | Corrosion in vapor phase, pitting maximum at 2 mils* |
| 8 | | 580 ppm | 4 | 0 | 0 | Excellent |
| 9 | 50:50 Propellant 11 & Propellant 12 | 86 ppm | 2 | 0 | 0 | Excellent |
| 10 | | 86 ppm | 2 | 0 | 0 | Excellent |
| 11 | | 86 ppm | 4 | 0 | 0 | Excellent |
| 12 | | 86 ppm | 4 | 0 | 0 | Excellent |
| 13 | 50:50 | 300 ppm | 2 | 0 | 0 | Corrosion at interface with Pitting maximum at 2 mils* |
| 14 | | 300 ppm | 2 | 0 | 0 | at 2 mils* 1 mil |
| 15 | | 300 ppm | 2 | 0 | 0 | Excellent |
| 16 | | 300 ppm | 2 | 0 | 0 | Excellent |

*Can walls 13 mils thick.


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## Chlorothene for Insecticides

(*From Page 36*)

solvent properties of methylene chloride, it is superior to Propellant 11, usually eliminating the need for a co-solvent where one is required with Propellant 11.

### Handling

No difficulty is encountered with in-plant handling. The same pumps and transfer equipment used for propellant 11 can be used for Chlorothene. It does not require special equipment as does methylene chloride. Because of its slightly higher boiling point, less solvent is lost through evaporation than that experienced with Propellant 11 and methylene chloride.

Chlorothene can be added either to the concentrate or blended with propellant 12 and enables the formulator to realize considerable dollar savings without loss of efficiency or effectiveness. ★

**SOLUBILITY**

| *Active Ingredient* | *Grams of Active Ingredients Soluble in 100 grams of Chlorothene at 70°F.* |
|---|---|
| DDT | 40.7 |
| Methoxychlor | 67.2 |
| Chlordane | 100+ |
| Rotenone Resins (Technical) | 6.7 |
| Lindane | 17.5 |
| Perthane[1] | 100+ |
| Strobane[2] | 100+ |
| Sesoxane[3] | 100+ |

•

### Lanolin Plus Buys Co.

Lanolin Plus, Inc., Chicago, aerosol marketer, recently purchased the 106-year-old Dr. Hostetter Drug Co. of Pittsburgh for an undisclosed amount of cash. Chief product made by Dr. Hostetter is a tonic for mild stomach disorders, of which the company has reportedly sold more than 50 million bottles.

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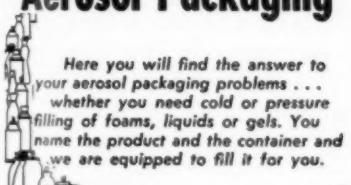

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## *European Meeting*

(*from page* 71)

as read by Mr. J. C. Kinahan, Jr., of London, both representatives of Du Pont. Mr. Piper's paper contained a most interesting account of USA merchandising techniques, methods by which sales studies are made and sales programs initiated, the importance of wide advertising campaigns, etc., and it opened the eyes of some Europeans to the future market potentials for their aerosol products. According to Mr. Piper, a recent market survey in the USA showed that 8 out of every 10 households buy some kind of aerosol products, the leading types being insecticides, air fresheners, hair fixatives and shaving foams.

Further, he pointed out that the market is by no means saturated. Only 45% of those surveyed bought insecticides, 39% air fresheners, 45% hair fixatives and 31% shaving lathers. The largest future expansion is looked for in cosmetics, pharmaceuticals and foodstuffs, all pressure-packaged. It was estimated that pharmaceuticals accounted for no more than 800,000 units in 1953, while in 1958 the number had jumped to 10.6 million units, with an estimated value of around $11 million dollars. Future production in all lines is basically estimated from the number of households which the USA will have in 1967. Taking a present estimate of 50.5 million, plus a marriage rate of 1.5 million unions per year, yields an estimated 58 million households by 1967. Projecting present surveyed consumption per household and taking into account new products, Mr. Piper stated that the estimate of two billion units per year in the next ten-year period could readily be reached. These are staggering figures for Europeans who generally, market-wise, follow the old Quaker method of "proceeding as the plan unfolds."

The official published text of the meeting, including all papers, is scheduled for October release in

French, German and English. No plans have as yet been made for the next international conference, but it can safely be said that if succeeding ones are as successful and interesting as the first, the international aerosol industry will be well served.★

## Gas Chromatography

(*from page* 22)

accuracy is required, integrator attachments to the recorder are available, which automatically determine, and in some instances, record the actual area directly on the graph paper.

$$\frac{100(M_x\%)\ (MW_x)}{(M_x\%)\ (MW_x)+(M_y\%)\ (MW_y)+\ldots+(M_n\%)\ (MW_y)}=W_x\%$$

where:

$M_x\%$ = Mole Percent of Component x

$M_y$ = Mole Percent of Component y

$MW_x$ = Molecular Weight of Component x

$MW_y$ = Molecular Weight of Component y

$W_x\%$ = Weight percent of Component x

The area of each peak may be determined simply by treating each peak as a triangle Then:

Area = (Ht) (Width at ½ Ht)

While this method is not extremely accurate, the errors involved will be constant and, therefore, will not appreciably affect the results. If more accuracy is required, integrator attachments to the recorder are available, which automatically determine, and in some instances, record the actual area directly on the graph paper.

This sampling device has been in use for over 18 months. During this time, several modifications and refinements were added. The final result was the device as described herein. Hundreds of determinations have been run, proving to us the accuracy and value of this device. The saving of man hours in calculations and standard correlations has also resulted in a sizable financial dividend on our development investment. Last, but by no means least, the simplicity of use and performance has permitted analyses to be accurately and quickly performed by technicians, freeing technical, personnel for more productive efforts.★

## Equipment Leasing

(*from page* 44)

in the answer to Question 6, lie in how leasing improves a company's financial situation.

1. Leasing offers financing without dilution of ownership or control.
2. In leasing, there is no necessity for a periodic cleanup of funds or a pledge of receivables.
3. Leasing may offer certain tax-timing advantages in specific instances.
4. Leasing makes for a cleaner balance sheet. Only the lease payments due within 12 months appear on the balance sheet, thus affecting the ratio of current assets to current debt very little. As a result, a company is able to use its established lines of credit for short-term borrowing without disturbance.

8. *What types of companies lease equipment?*

All types of companies in virtually every industry today lease equipment. They range in size from quite small companies (restaurants and motels, for example) to giant companies in the billion-dollar-a-year sales category. According to Nationwide Leasing Company's annual surveys, the 10 leading industries using leased equipment in 1958 were nine manufacturing industries and the supermarket industry. They are (in alphabetical order): aircraft and parts; chemicals and drugs; construction and road-building; electrical equipment and machinery; fabricated metal products; food products; petroleum refining; printing and publishing; pulp, paper, and allied products; the supermarket industry. This year marked the first time a non-manufacturing industry (supermarkets) was ranked among the top 10 users of leased equipment.

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9. *What is the length of equipment lease terms?*

Terms range generally from three to 10 years or longer, though in some cases, where smaller sums are involved, they can be as little as two years. The user determines the length of lease he prefers, arranges the payments to suit his own needs. Leases are usually written on a uniform payment basis although they can be written on straight line, declining balance, sum of the digits, or any schedule preferred by the user.

10. *Is equipment leasing useful as a sales tool for manufacturers of production equipment?*

In a number of industries, leasing programs have proved to be an effective method of increasing sales, through offering customers the option of purchase or lease—with the leasing company assuming the lease contract and paying the manufacturer 100% cash for the equipment when the equipment is delivered. Nationwide is a leading specialist in this particular leasing field. The leasing company sets up a complete sales training program for the manufacturer so that his leasing plan will have maximum impact.

In merchandising-leasing plans, leasing is used as a primary sales tool, giving the manufacturer's salesmen an important new way to move goods. The customer has the benefit of the lease—the manufacturer has a cash sale. Not only does this normally enable a manufacturer to increase his sales by the added leasing volume, but the interest generated around the leasing plan results in opening new markets for the product and inevitably results in increased direct sales, often greater than the leasing volume.

11. *How does leasing compare with other methods of financing?*

Leasing offers 100% financing and provides the aerosol packager with greater cash flow than any other financing method. As a result, the relative cost of leasing is less than other methods. Any expenditure of money to acquire equipment involves paying something for the use of the money. Even in the case of outright cash purchase, the aerosol packager is sacrificing the earnings that his working cash would yield; this, in effect, is what he is "paying" for the use of his own money. In the pressurized packaging industry this means a "cost" of 46 per cent—the average *before-tax* rate of profit on net working capital the industry has earned over the last five years.

Leasing frees more working capital immediately than any other method of obtaining equipment. This cash excess earns profits for the company at its normal rate for the term of the lease. Over the lease period the additional profits produced by this cash excess will most often be so great that the relative cost of leasing will be lower than other financing methods. (A complete analysis of the comparative cost of leasing and other financing methods has been developed by the Foundation for Management Research. It is entitled: "Lease or Buy? Comparative Costs of Equipment Acquisition." Single free copies may be obtained by writing directly to the Foundation at 121 West Adams Street, Chicago 3, Illinois.)

12. *What are recent trends in leasing?*

Two new trends have shown themselves: (1) the sale-leaseback transaction (commonly, but erroneously, termed purchase-leaseback) and (2) merchandising-leasing plans involving the cooperation of equipment manufacturers and a leasing company to increase sales.

In the sale-leaseback transaction, a company builds a new plant, sells the equipment and facilities to the leasing company as soon as it is completed and ready for use, and immediately leases it back. *Often this is done with older plants also.* This enables firms whose financial ratios would not otherwise permit them to expand at so great a rate, to do so without straining their capital structure.

13. *What operating-situations make leasing most advantageous?*

a. In general, where companies can expand their operations profitably, if additional equipment and machinery

were made available at smaller annual expense than through use of their own capital.

b. Companies which find themselves short of working capital but which have sufficient equipment, can remedy the situation through sale-leaseback transactions.

c. Companies faced with competition that is using the latest equipment, while they themselves lag on cost-saving. In this situation, acquiring the new equipment is essential, but often a large initial cost is prohibitive. In this situation, leasing can often provide the solution.

d. Companies which hold a tight check rein on capital expenditures and financial ratios. Leasing permits the management of these companies to secure new equipment without forcing the board of directors to raise more capital.

e. Where rapid obsolescence is a strong possibility, leasing bypasses the problem of capital investment in such equipment.

f. For pilot plants, developmental or experimental projects, leasing offers a means of opening new areas of production without draining working capital on such unproved ventures.

g. Companies engaged in defense contract work are often enabled, through leasing, to obtain needed equipment for the term of the contract. In this way capital is not frozen in equipment which may not be useful after the contract has been fulfilled.

14. *Do leasing agreements contain purchase options?*

Yes, leasing agreements can contain purchase options. However, Nationwide Leasing advises against including purchase options in the leasing agreement. The reason is that a purchase option generally converts a leasing agreement into a conditional sales contract, in the eyes of the Internal Revenue Department. There are some exceptions to this general rule, but these exceptions are uncertain and depend on specific rulings by the Internal Revenue Department at the conclusion of the contract, many years later. For this reason, purchase options are not recommended. True lease payments, as differentiated from disguised conditional sales contract payments, are legitimate deductions as operating expenses. Conditional sales contracts are deductible only at the rate specified in the federal government's depreciation schedules.

15. *Do leasing contracts contain renewal options?*

Yes, of course. In leasing, the cost of the equipment is paid for entirely in the original leasing term. Renewal options are usually available at extremely low cost. They can range in length from one-year options to indefinite terms.

16. *Does leasing offer companies tax advantages?*

This has been an area of much misinformation. Leasing is not a method of tax avoidance; its primary value lies in the way it frees working capital for other uses. In certain specific situations leasing may also offer companies advantages of tax-timing which are not to be ignored. Leasing charges are legitimately deductible as business expenses. As such, they reduce taxable income *now*.

Leasing may also offer a tax advantage that can be of particular importance to companies which find that their equipment tends to become obsolete much more quickly than government depreciation tables permit. For example, a company using equipment that experience shows it can expect to have to replace in seven years, may find that depreciation tables permit depreciation only over 15 years. By leasing this equipment for a seven-year period, this company would be able to deduct the full cost of the equipment from taxable income in seven years. If the company had purchased the equipment, it would have used only seven years


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worth of depreciation and would have to forego further depreciation benefits, if it wished to replace the equipment at the end of seven years.

In certain sale-leaseback situations also, tax advantages may accrue, since the sale of an asset normally involves taxation at the capital gains rate, if a profit is made, rather than at the corporate rate.

17. *How can I tell if my company should lease or buy?*

There is no method of financing that fits every situation equally. Factors to be judged include the availability of working capital, the rate of profit the company earns on its working capital, the effect of leasing on the company's cash flow as compared with other financing methods, the company's competitive situation, and whether there are any tax advantages in the company's special situation.

Expert advice never hurts. Readers may obtain an analysis of their situation, without obligation, by writing to the author at Nationwide Leasing, 11 South LaSalle Street, Chicago 3, Illinois.★


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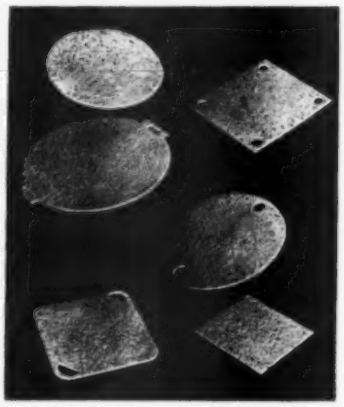

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## Aerosols in Review

(*From Page* 42)

ing table.

"3. Finally, the use of refillable aerosol containers offers a long-range economy. The decorative, reusable outer container makes it possible for a woman always to have in her purse or on her dressing table an attractive, high styled grooming accessory for the cost of a refill alone."★

## ConCan Air Crash

(*From Page* 19)

1957. Previously he had been plant manager at Clearing (Chicago). He is survived by a wife and two daughters living at Darien, Conn.

William J. Mutschler, 45, was connected with the company for 23 years. Prior to his 1958 appointment as general manager of production engineering, he was general manager of cannery equipment service. He is survived by his wife and two sons, living at Mamaroneck, N. Y.★

## Product Liability

(*From Page* 26)

legally liable.

Generally speaking, he is legally liable for damages to persons or property only when there is some degree of negligence on his part, such as selling a defective product or merchandise which is not, in fact, what he represents it to be. The insurance company agrees to pay only for those claims for which he may be legally liable. Therefore, they are not unreasonably influenced by consideration the manufacturer may wish to show his customers.

It should be emphasized that, similar to other "liability" claims, the insurance company generally makes exhaustive investigations of all the facts and arrives at a conclusion as to whether or not they are required to pay a damage award on his behalf. It may be said that one of the benefits of the coverage consists of this investigation of a claim by competent claims investigators of the insurance company. A further benefit is the handling of the defense of all such claims, whether they are valid or not.

Product liability insurance covers the handling or use of the product manufactured, as well as the existence of any condition or warranty of the merchandise. It covers only the merchandise which has been sold and which the manufacturer has relinquished possession thereof to other people. It does not cover any equipment he may manufacture and rent to others. It does not cover accidents arising out of the use of his products which occur on premises which he owns, rents or controls. It does not cover loss or damage to the product itself.

After reading this brief description of products liability insurance coverage with the many exclusions and other special features, it is evident why it is so important to secure coverage with a reliable, up-to-date company that has the sales and underwriting staffs to write your protection efficiently and effectively. It is most important that no legal loop-holes be left open, whereby you could conceivably be sued for some kind of accident not covered by your policy.

In conclusion, speaking as a safety engineer, there are still some things the aerosol industry could do to further educate the public in the safe use of aerosol containers:

1. Stress the advantages of reading and following the instructions on the label relative to high temperature storage.
2. Emphasize even more vigorously the danger involved if an empty can is placed in a bonfire or incinerator.
3. Inform the public by means of definite instructions how to dispose of empty aerosol packages safely.

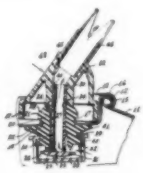
An educational program of this sort would help prevent injuries to your consumers, reduce premium costs due to lower losses and increase good will for your industry.★

# New Aerosol Patents

**Listed below is a brief review of recent patents pertinent to the aerosol and related industries.**

**Complete copies of these patents may be obtained by writing to the Commissioner of Patents, U. S. Patent Office, Washington 25, D. C., and remitting 25 cents for each copy desired.**

2,889,086. DISPENSING VALVE WITH STEM SEALING MEANS. Issued June 2 to Leonard M. Collins, Los Angeles, Calif., assignor to Pressure Dispensers, Inc., Hollywood, Calif.

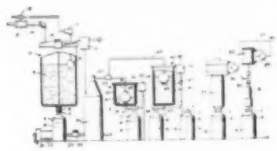


A tilt-opening dispensing valve for a pressurized container comprising: a resilient body mounted in an opening in said container, said body having a bore therethrough from the outer to the inner end and a valve seat at the inner end thereof within said container, said valve seat comprising an annular resilient bead projecting from said body and being substantially narrower, in cross-section, than the inner end of said body; a rigid valve member having a stem extending through said bore and a head on the inner end adapted to engage against said annular resilient bead valve seat, said stem having an opening therein extending from the outer end to a position just outwardly of said head, said head being normally held against said annular resilient bead valve seat by fluid pressure within said container and being readily movable away from said annular resilient bead valve seat upon lateral displacement of the outer end of said stem relative to said body to thereby open said valve and cause the exit of fluid from said container under fluid pressure; and an annular packing flange formed on said body and surrounding said stem in said bore, said flange having a deformable lip portion in sealing engagement with said stem and displaced towards the inner end of said bore from the base portion of said flange adjacent said body whereby to be moved away from said stem by fluid flowing into said container and held against said stem by fluid flowing out of said container.

•

2,889,789. METHOD OF FILLING VOLATILE PROPELLANT ON WARM PRODUCT Issued June 2 to Albert B. Mojonnier, Chicago, assignor to Kartridg-Pak Machine Co., Chicago.

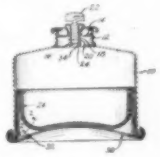
The method of packaging a volatile propellant and a product which is liquid at ambient temperature and at least semi-solid at the boiling point of the propellant under atmospheric pressure comprising, introducing a measured quantity of liquid product at substantially ambient temperature into an open container, dispensing



into the open container a quantity of liquified propellant sub-cooled to a temperature substantially below the boiling point thereof at atmospheric pressure on top of the warm product therein, flowing at least the initial portion of said propellant gently on top of the warm product in the container with a low velocity insufficient to cause the propellant to penetrate an appreciable distance into the warm product whereby to spread the propellant smoothly over the surface of the warm product to chill and at least partially solidify only the surface of the warm product, and thereafter closing the container.

•

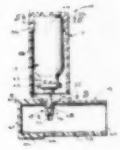
2,889,078. DISPENSING CONTAINER FOR PRESSURE PROPELLED PRODUCTS. Issued June 2 to Ralph Henry Thomas, Rahway, N. J., assignor to Colgate-Palmolive Co., Jersey City, N. J.



A dispensing container wherein a self-contained gaseous propellant is isolated during long storage and use from contact with product to be dispensed, comprising a rigid outer casing, a recessed bottom member sealed to said casing and adapted to permit said casing to stand upright on a flat, horizontal surface, a top closure on said casing, an outlet in said top closure for discharge of material to be dispensed from said container, a valve closing said discharge outlet, a plastic coated metallic foil non-resilient diaphram sealed to said casing and forming an upper chamber communicating with said valve, said upper chamber containing a product to be dispensed through said valve, and said diaphram forming with said bottom member a sealed lower chamber containing gaseous propellant, said metallic foil rendering said diaphram impervious to said gaseous propellant, said diaphram transmitting the pressure of said gaseous propellant from said sealed lower chamber to said product in said upper chamber and deforming so as to shrink the volume of said valved chamber as said product is dispensed through said valve, while preventing contact of said product with said propellant gas during storage and use.

2,890,697. ENCLOSED MEDICAMENT CONTAINER AND ATOMIZER. Issued June 16 to Wilton E. Van Sickle, Lincoln, Nebr.

A medicament container and atomizer comprising an elongated housing comprising normally telescoped cup-shaped inner and outer sections having open ends, a



pressurized medicament bottle engaged in one of said sections, valved atomizing nozzle means on said bottle reaching beyond the open end of said one section, the other section having a side wall provided with an opening and air inlet means, said valved nozzle means having a nozzle adapted to be engaged in said opening and operatively engaged with said side wall when the sections are separated from each other, said nozzle having an atomizing discharge orifice within said other section and directed toward the open end of said other section.

•

2,890,794. METHYL BROMIDE PACKAGE. Issued June 16 to Albert E. Deline, St. Louis, Mich., assignor to Michigan Chemical Corp., St Louis, Mich.

A package comprising a body of methyl bromide within a metal can having a seamless side wall which has a body section comprised of a main body section which has the shape of a hollow truncated cone and an upper section which generally tapers to a circular mouth which is smaller than the main body section and surrounded by a rolled section which is generally circular in vertical cross-section, an inwardly domed bottom affixed to the lower edge of the main body section by a double rolled joint, a gasket of a polymeric butadiene-acrylonitrile elastomer composition on the edge of the said mouth; a circular metal cap positioned over the said mouth having an edge section which is generally semi-cylindrical in cross-section, which has an inner section which is outwardly crimped to bear forcefully against the inner side of the metal surrounding the said mouth, an outer section which is inwardly crimped to bear forcefully against the outer side of the metal surrounding the said mouth and an intermediate section

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which bears forcefully on the said gasket to place it under compression against the upper edge of the metal surrounding the mouth of the said can.

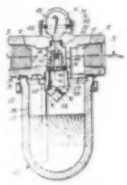
•

2,890,817, VALVE MEANS FOR PRESSURIZED CONTAINER. Issued June 16 to James A. Rheinstrom, Cincinnati, assignor to Karl Kiefer Machine Co., Cincinnati.

In a pressure container including a cap for sealing said container, said cap incorporating a discharge valve for dispensing the contents of said container, secondary valve means for introducing a propellant gas into said container, said secondary valve means comprising at least one port in said cap radially disposed with respect to said discharge valve, a resilient sealing member underlying and normally closing said port, said resilient sealing member being deflectable downwardly to open said port to the flow of propellant gas therethrough upon the application of such gas under pressure to the external side of said port, and means maintaining said resilient sealing member in position to normally close said port.

•

2,890,765. METHODS AND APPARATUS FOR GENERATING AN AEROSOL. Issued June 16 to Morley V. Friedell, Wheatridge, Colo., assignor to C. A. Norgren Co.



An aerosol generator comprising a casing having an inlet to be connected to a source of gas under pressure and an outlet, means in the casing forming a venturi section open at one end, a liquid supply passage in the casing opening to the throat of the venturi section, a settling chamber communicating with the venturi section and with the outlet, gas passageway means communicating at one end with said inlet and opening at the other end into said throat of the venturi section adjacent said liquid supply passage opening, said passageway means serving to conduct gas at high velocity into said venturi section to break up liquid from said supply passage into a fine spray and to move the spray generally longitudinally of the venturi section toward the open end thereof and into the settling chamber, and means for creating a gas baffle intercepting said movement of the spray intermediate the throat of the venturi section and the settling chamber including gas conduit means communicating at one end with said inlet and terminating at the other end in at least three jets directed toward and normal to the axis of spray movement to further break up the spray and to reduce the velocity of movement of said spray toward said settling chamber.

## Trade Mark Application

**Applications for registration of the following trademarks were published in recent issues of the *Official Gazette* of the U. S. Patent Office. In not all cases are there strictly aerosol trademarks, however many of the products listed below come within the category of those for which a possible future use in aerosols is foreseen.**

GALA EL MOROCCO, for perfumes. Filed July 23, 1956, by El Morocco Corp., New York, assignee, by mesne assignments, of Geoffrey M. T. Jones, New York, reporting first use June 29 of same year.

SILK SHEEN, for hair spray, cream rinse, cream shampoo. Filed May 13, 1957 by Helena Rubinstein, Inc., New York, reporting first use Aug. 1, 1949.

PURE SURE, for fluid for starting internal combustion engines which is sprayed into the air cleaner or air intake. Filed April 28, 1958 by The Pure Oil Co., Chicago, claiming first use March 7 of same year.

WONDER SPRAY, for spray-type decorative enamel for general interior and exterior use. Filed Dec. 16, 1957 by Devoe & Raynolds Co., Louisville, reporting first use Nov. 20, 1957.

DOSISPRAY, for medical spray preparations. Filed Aug. 21 by C. H. Boehringer Sohn, Ingelheim am Rhein, Germany, reporting first use Aug. 22, 1957 under German patent.

HUBERT de GIVENCHY, for perfumes, toilet water, shaving cream, hair dyes, cologne water, and other toilet goods. Filed May 15, 1957 by Givenchy (Societe Anonyme), Paris, France, with first use reported on Dec. 5, 1956.

FLUOREX, for fungicides and insecticides. Filed Oct. 21, 1958 by American Fluoride Corp., New York, claiming first use Jan. 1, 1926.

BEAUTY CURL, for hair spray. Filed May 16, 1957 by Richard Hudnut, Morris Plains, N. J., claiming first use May 7.

IMPERIAL BEAUTY, for colognes, deodorant, hair spray, skin freshner, and a wide range of cosmetics. Filed March 5, 1958 by Joseph Schultz, d b.a. Imperial Research, Chicago, with first use given as Feb. 17 of same year.

# CLASSIFIED ADVERTISING

Address all classified replies to Box Number c/o *Aerosol Age*, PO Box 31, Caldwell, N. J. Rates for "Help Wanted" advertisements are 20¢ per word; minimum charge $3.00. Rate for individuals seeking employment is 5¢ per word, $1.00 minimum. Advertisements of new machinery, products and services accepted at the rate of $10.00 per column inch. Minimum space, one inch. Copy closing date, 10th of preceding month. *Checks must accompany all orders.*

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### Breck Sets Ad Campaign

John H. Breck, Inc., Springfield, Mass., will offer purchasers of its products an RCA-Victor "Living Stereo" record valued at $5.98 for $1.25 plus a Breck box top or label. The offer, good from Sept. 1 to Dec. 1, will be made on an exclusive basis as part of a tie-in promotion between Breck and RCA Records. Breck advertising in support of the consumer record offer will consist of full-color advertisements in *Ladies Home Journal*, *McCall's*, *Seventeen*, *Charm* and other national magazines.

FOR SALE:

FOR SALE—Complete refrigeration equipment for aerosol line, including 25 H.P. ammonia compressor and 25 ton capacity evaporative condenser, complete with receiver and starting boxes. Contact Mr. Louis Kent, Kerr Chemicals, Inc., Northwest Highway, Des Plaines, Illinois — Phone Vanderbilt 7-4477.

1 MODEL REF752 MOJONNIER REFRIGERATION UNIT, in excellent condition, with 2 Evaporators, 7½ ton, 25 h.p. motor, slightly used, with a cooling tower. Address Box 187, c/o Aerosol Age.

### Lyons to Max Factor Post

Appointment of William Lyons as advertising manager of its U. S. Division has been announced by Max Factor & Co., Hollywood, Calif. He will function as advertising manager on all Max Factor products marketed in the United States.

Prior to joining Factor, Mr. Lyons was with the Toni Co., Chicago, as brand manager, and before that he was with Benton & Bowles, Inc., in New York, as an account executive.

•

### Felton Names Canadian Mgr.

Felton Chemical Co., New York, has named George Liebel to the post of manager of its Canadian Division.

Philip Meshberg, president of Emson Research (left) confers with M. Rene Pollet, president of SAFCA France, on his June visit to Europe. Mr. Meshberg visited aerosol marketers and suppliers in several west European countries.

•

### Nelson to L&F Post

The Lehn & Fink Division of Lehn & Fink Products Corp., New York aerosol marketer, last month named Edgar W. Nelson to the newly-created post of general manager. He was previously senior vice-president of Market Planning Corp., an affiliate of the McCann-Erickson advertising agency, and prior to that was assistant to the president at Lever Brothers.

•

### Congress Ups FDA Budget

The Federal Food and Drug Administration next year will have $2 million more for use in research and drug application reviewing. The sum was voted by both the House of Representatives and the Senate for the coming year. Some of the funds will be used to hire personnel, generally increase services, and to staff field offices.


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# BUYER'S GUIDE

## ISSUE OF AEROSOL AGE

- The third annual Aerosol Buyer's Guide will be the most complete listing of aerosol suppliers ever compiled — and will be used by industry buyers until October of 1960.

- Make sure your company's products or services are listed in the new Buyer's Guide by writing to our editor today. *All product listings are free.* Advertisers in the Buyer's Guide will receive a bold face listing together with a cross reference to the advertising page number.

- **Here are some of the categories that will be listed in the Buyer's Guide:**

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**Valves**
**Dip Tubes**
**Propellants**
**Equipment**
**Labels**
**Insecticides**
**Aromatics & Perfumes**
**Pharmaceuticals**
**Emulsifiers**
**Deodorants**
**Lanolin**
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**Aerosol Products (filled containers for the trade)**
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- Make sure that your company takes the fullest advantage of this year's Buyer's Guide by scheduling a dominant advertisement in the same issue to secure the bold face listing in the directory together with the cross reference to your advertising page. Regular advertising rates!

**Advertising Deadline for October Is September 12**

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### Haile Union Carbide V.P.

Union Carbide Corp., New York, recently announced the election of William M. Haile, former president of the corporation's Linde Co. Div., to the post of vice president. He will supervise the activities of Linde, National Carbon Co., and Union Carbide Metals Co. Linde is a producer of nitrogen and other compressed gases used in aerosol packaging, and National Carbon markets it own line of aerosol products, including insecticides and insect repellents.

To succeed Mr. Haile as president of Linde, the company named William B. Nicholson, who first joined the concern in 1935 as an engineer in the development laboratory at Newark, N. J.

### Top Wip to LA Agency

Reddi-Wip, Inc., Los Angeles, recently announced the appointment of Kenyon & Eckhart, Inc., Los Angeles advertising agency, to handle all advertising and marketing resonsibilities for "Top Wip", a low-calorie pressurized whipped topping introduced on the national market last year.

# OVER THE TRANSOM

CONSUMER knowledge of exactly *what* constitutes an "aerosol" may be still as bad as (or even worse than) recent consumer studies have shown. Latest indication comes from two reliable sources, each working toward a similar goal.

From Philadelphia, Wiley Pickett, former Pennsalt technical man now in the aerosol brokerage business, reports that he is constantly encountering potential aerosol customers whose *only* knowledge of aerosols extends to hair sprays, insecticides, room deodorants, and possibly toothpaste. Wiley is running an aerosol promotion center at John Wanamaker's, Philadelphia department store, and tells us that consumer knowledge generally appears to be not substantially better than it was two or three years ago.

In New York, Norman Odell Associates, publicity agency for the Aerosol Division of the CSMA, has been canvassing merchandising directors and store managers of supermarket chains with the thought toward setting up an aerosol promotion program in one of the stores in the Metropolitan area. Here, too, there appeared to be an abysmal lack of knowledge of aerosols. Some store managers, supposedly experts in merchandising, are still confused about the meaning of the term aerosol. For instance, many wanted to lump hand sprayers and squeeze bottles into the aerosol category.

* * *

**In case you haven't heard, Gillette is the major shave cream marketer who will shortly introduce that non-chilling aerosol anti-perspirant. The first word about this product, mentioned in this column for May, brought a number of inquiries. The product will be called "Right Guard," which has prompted one or two industry wags to suggest another product to be called "Left Guard," for use under the *other* arm!**

* * *

Mrs. John Cassullo, wife of the president of Fritzsche Bros., caught what authorities say was the largest swordfish ever taken by a woman in the Atlantic on July 5. The catch, a 492-pound broadbill swordfish measuring 11 feet 9 inches in length, took Mrs. Cassullo one hour and 58 minutes to bring in; and earned her a photograph and "rave" notices in the *New York Herald Tribune's* "rod and gun" column. Her husband, a champion big game fisherman himself, has won numerous awards for fish he has taken in various fishing grounds.

* * *

**Bob Abplanalp, Precision Valve exec and holder of so many aerosol valve patents, became a father for the second time on June 27. His wife gave birth to a strapping 9 lb. 2 oz. girl, who'll be called Marie.**

* * *

Harry Schwartz, *New York Times'* Russian expert, covered the Russian-American track meet in Philadelphia last month. In the July 20 issue of the Times, he reports the following

"The Soviet women athletes regard themselves as career women who don't have much time to waste in beauty parlors keeping themselves looking pretty.

"As a result, one minor product of American technology has made a hit with a lot of them. It's the sprays a gal can use to set her hair in five minutes. A number of spray sets, bought in a local drug store, are going back to the Soviet Union in the girls' luggage, compliments of one of the American interpreters."

* * *

Gus Lawrence, popular member of DuPont's "Freon" sales force, is recovering from a serious case of pneumonia.

* * *

**Pam Industries, Chicago, claims to have sold 10 million containers of its "Dry Fry" within the first two and one half months of introduction of the product over national television. We wonder how much of this figure went toward filling shelf space. Last year, when toothpaste began to move, a considerable proportion of early production figures went for this purpose.**

* * *

*"Lucky Whip," one of the most sensationally successful products in the history of the aerosol industry, will go after an even bigger share of the dessert topping market. Lever Brothers, marketer of the product, will bring out strawberry and chocolate versions this month.*

*"Could this be the cap for that shaving cream?"*